SHARP

SERVICE MANUAL
SERVICE-ANLEITUNG

S90i7PG-M10SU

DLP PROJECTOR
DLP PROJEKTOR

MODELS
MODELLE

PG-M10SU/SE
PG-M10XU/XE

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

Im Interesse der Benutzersicherheit (erforderliche Sicherheitsregeln in einigen Ländern) muß das Gerät in seinen Originalzustand gebracht werden. Außerdem dürfen für die spezifizierten Bauteile nur identische Teile verwendet werden.

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SHARP CORPORATION

Specifications

Product type	Digital Multimedia Projector
Model	PG-M10X/PG-M10S
Video system	NTSC/NTSC4.43/PAL/PAL M/PAL N/PAL60Hz/SECAM
Display method	Single Chip Digital Micromirror Device™ (DMD™) by Texas Instruments
DMD panel	Panel size: 21.8 mm (0.7″), 1 chip XGA DMD No. of dots: 786,432 dots (1,024 [H] × 768 [V])/PG-M10X, 480,000 dots (800 [H] × 600[V])/PG-M10S
Lens	Manual focus fixed lens, F3.0, f = 23 mm
Projection lamp	High Performance Compact lamp, DC130W
Contrast ratio	800:1
Video input signal	RCA Connector: VIDEO, composite video, 1.0 Vp-p, sync negative, 75 Ω terminated 3.5 ϕ mini jack: AUDIO, 0.4 Vrms more than 47 kΩ (stereo)
S-video input signal	4-pin mini DIN connector Y (luminance signal): 1.0 Vp-p, sync negative, 75 Ω terminated C (chrominance signal): Burst 0.286 Vp-p, 75 Ω terminated
Horizontal resolution	500 TV lines (video input)
Audio output	0.5 W (monaural)
Computer RGB input signal	15-PIN MINI D-SUB CONNECTOR: RGB separate/sync on green type analog input: 0–0.7 Vp-p, positive, 75 Ω terminated 3.5 ϕ MINIJACK: AUDIO, 0.4 Vrms, more than 47 kΩ (stereo) HORIZONTAL SYNC. SIGNAL: TTL level (positive/negative) VERTICAL SYNC. SIGNAL: Same as above
Pixel clock	12–157 MHz
Vertical frequency	50–85 Hz
Horizontal frequency	15–91 kHz
Speaker system	3.5 × 2 cm (1 3/8″ × 13/16″) oval
Rated voltage	AC 110–120/220–240 V
Input current	1.0 A/1.9 A
Rated frequency	50/60 Hz
Power consumption	180 W (PG-M10X/PG-M10S)
Operating temperature	41°F to 95°F (+5°C to +35°C)
Storage temperature	14°F to 140°F (–10°C to +60°C)
Cabinet	Magnesium alloy (Terminal panel, Lamp cover and side vent cover constructed of plastic)
I/R carrier frequency	38 kHz
Laser pointer of remote control	Wave length: 650 nm / Max. output: 1 mW / Class II Laser Product
Dimensions (approx.)	230 × 48 × 177 mm (9 9/16″ (W) × 2 3/8″ (H) × 6 15/16″ (D)) (main body only) 231 × 61 × 177 mm (9 1/8″ (W) × 2 3/8″ (H) × 6 15/16″ (D)) (including adjustment feet and projecting parts)
Weight (approx.)	1.4 kg (3.1 lbs.)
Supplied accessories	Remote control, Two AAA size batteries, Power cord for Americas (1.8 m, 5′ 15/16″), Power cord for Europe (1.8 m, 5′ 15/16″), Power cord for Australia, New Zealand and Oceania (1.8 m, 5′ 15/16″), Power cord for U.K., Hong Kong and Singapore (1.8 m, 5′ 15/16″), Computer RGB cable (1 m, 3′ 3″), Audio cable (1 m, 3′ 3″), Audio adapter (15 cm, 6 45/64″), USB mouse control cable (1 m, 3′ 3″), PS/2 mouse control cable (1 m, 3′ 3″), Video cable (1 m, 3′ 3″), S-Video cable (1 m, 3′ 3″), Soft pouch, Carrying bag, Projector operation manual, Projector quick reference
Replacement parts	Remote control (9FU770823300), Two AAA size batteries (9FU770702000), Power cord for Americas (9FU770726000), Power cord for Europe (9FU770727000), Power cord for Australia, New Zealand and Oceania (9FU770729000), Power cord for U.K., Hong Kong and Singapore (9FU770728000), Computer RGB cable (9FU770708000), Audio cable (9FU770710000), Audio adapter (9FU770704000), USB mouse control cable (9FU770707000), PS/2 mouse control cable (9FU770706000), Video cable (9FU770703000), S-Video cable (9FU770709000), Soft pouch (9FU770823400), Carrying bag (9FU770823200), Projector operation manual (9FU770822800), Projector quick reference (9FU770822900)

This SHARP projector uses a DMD panel. This very sophisticated panel contains 786,432 (PG-M10X)/480,000 (PG-M10S) pixels. As with any high technology electronic equipment such as large screen TVs, video systems and video cameras, there are certain acceptable tolerances that the equipment must conform to.

This unit has some inactive pixels within acceptable tolerances which may result in inactive dots on the picture screen. This will not affect the picture quality or the life expectancy of the unit.
If you have any questions about this matter, please call toll free 1-888-GO-SHARP (1-888-467-4277). U.S.A. ONLY

Specifications are subject to change without notice.

NOTE TO SERVICE PERSONNEL

UV-RADIATION PRECAUTION

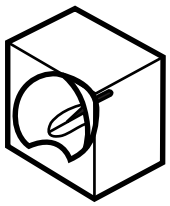
The light source, metal halide lamp, in the DLP projector emits small amounts of UV-Radiation.

AVOID DIRECT EYE AND SKIN EXPOSURE.

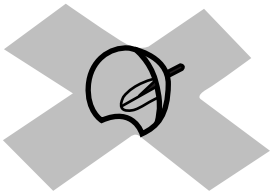
To ensure safety please adhere to the following:

1. Be sure to wear sun-glasses when servicing the projector with the lamp turned “on” and the top enclosure removed.

2. Do not operate the lamp outside of the lamp housing.



3. Do not operate for more than 2 hours with the enclosure removed.



UV-Radiation and Medium Pressure Lamp Precautions

1. Be sure to disconnect the AC plug when replacing the lamp.
2. Allow one hour for the unit to cool down before servicing.
3. Replace only with same type lamp. Type BQC-PGM10X//-1 rated 85V/130W.
4. The lamp emits small amounts of UV-Radiation, avoid direct-eye contact.
5. The medium pressure lamp involves a risk of explosion. Be sure to follow installation instructions described below and handle the lamp with care.

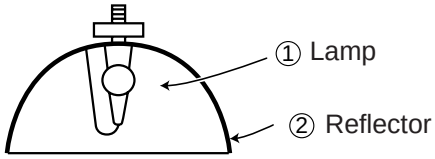
UV-RADIATION PRECAUTION (Continued)

■ Lamp Replacement

Note:

Since the lamp reaches a very high temperature during units operation replacement of the lamp should be done at least one hour after the power has been turned off. (to allow the lamp to cool off.) Installing the new lamp, make sure not to touch the lamp (bulb) replace the lamp by holding its reflector ②.

[Use original replacement only.]



DANGER ! — Never turn the power on without the lamp to avoid electric-shock or damage of the devices since the stabilizer generates high voltages at its start.

Since small amounts of UV-Radiation are emitted from an opening between the duct cover and the lamp housing, it is recommended to place the LENS CAP on the opening during servicing to avoid eye and skin exposure (Fig. 1).

Notes:

- Please obtain a lens cap before servicing a model PG-M10SU/SE, PG-M10XU/XE that is received without one.
- The color wheel is running at high speed. Do not touch it nor bring anything nearby.

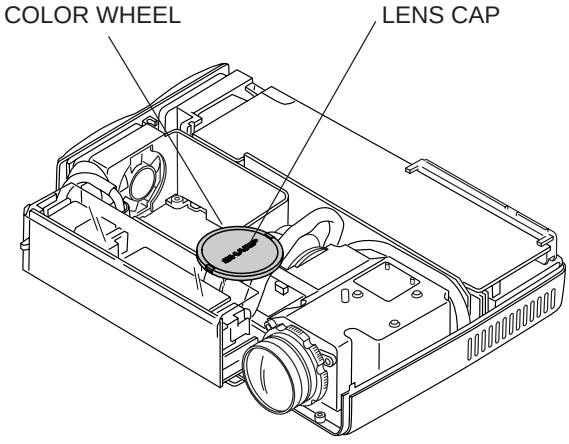
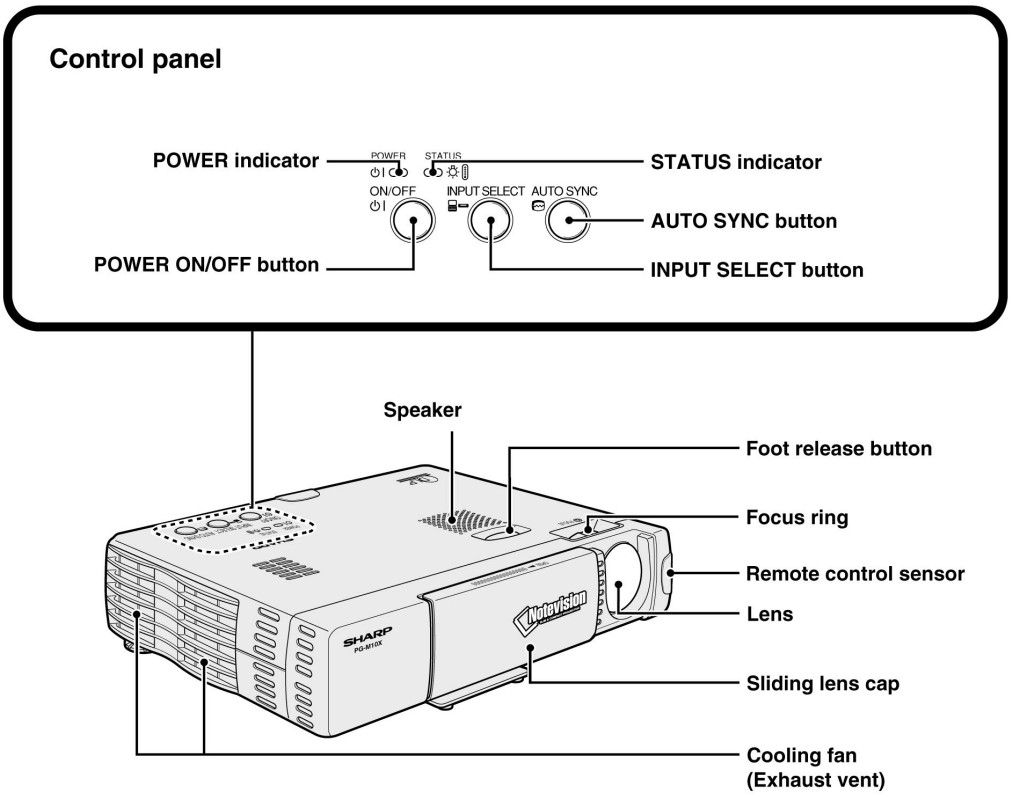


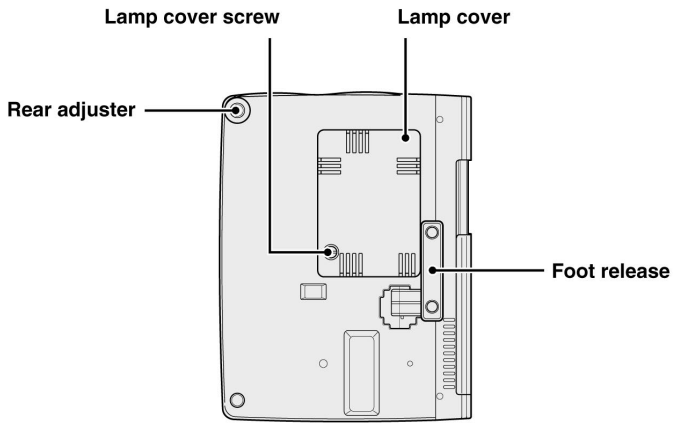
Figure 1.

Location of Controls

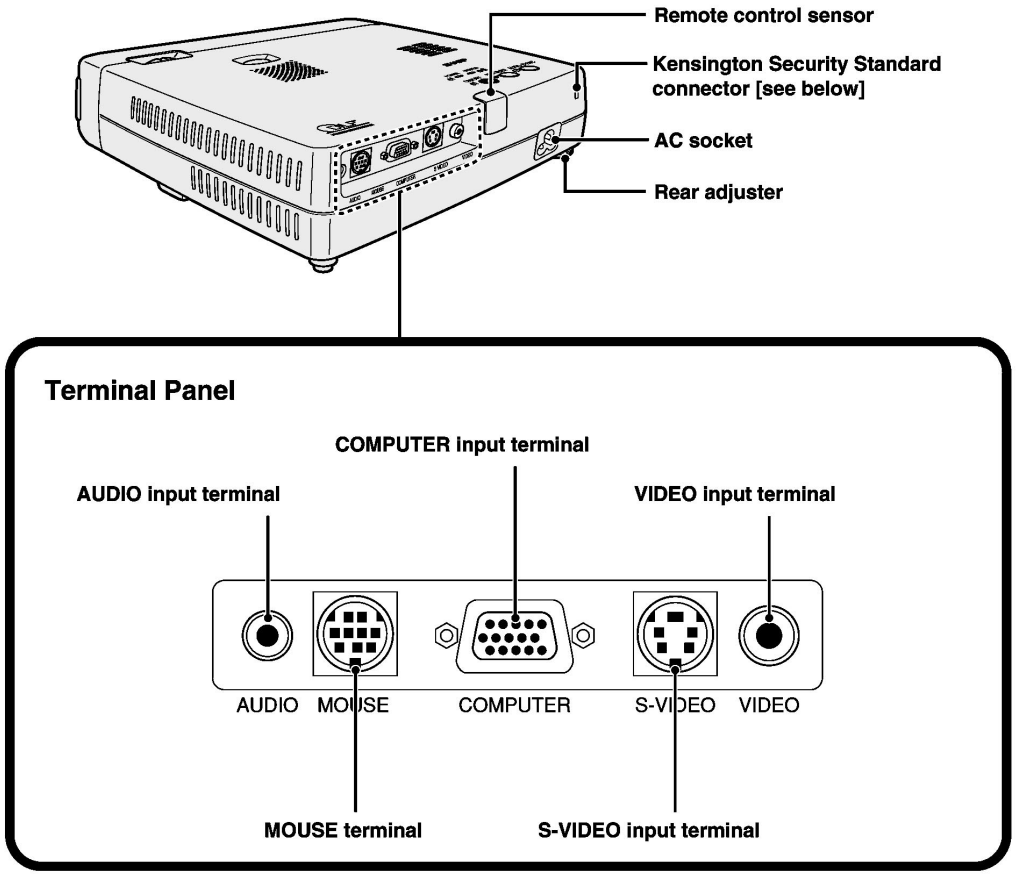
Top, front side panel view



Bottom



Rear and side panel view

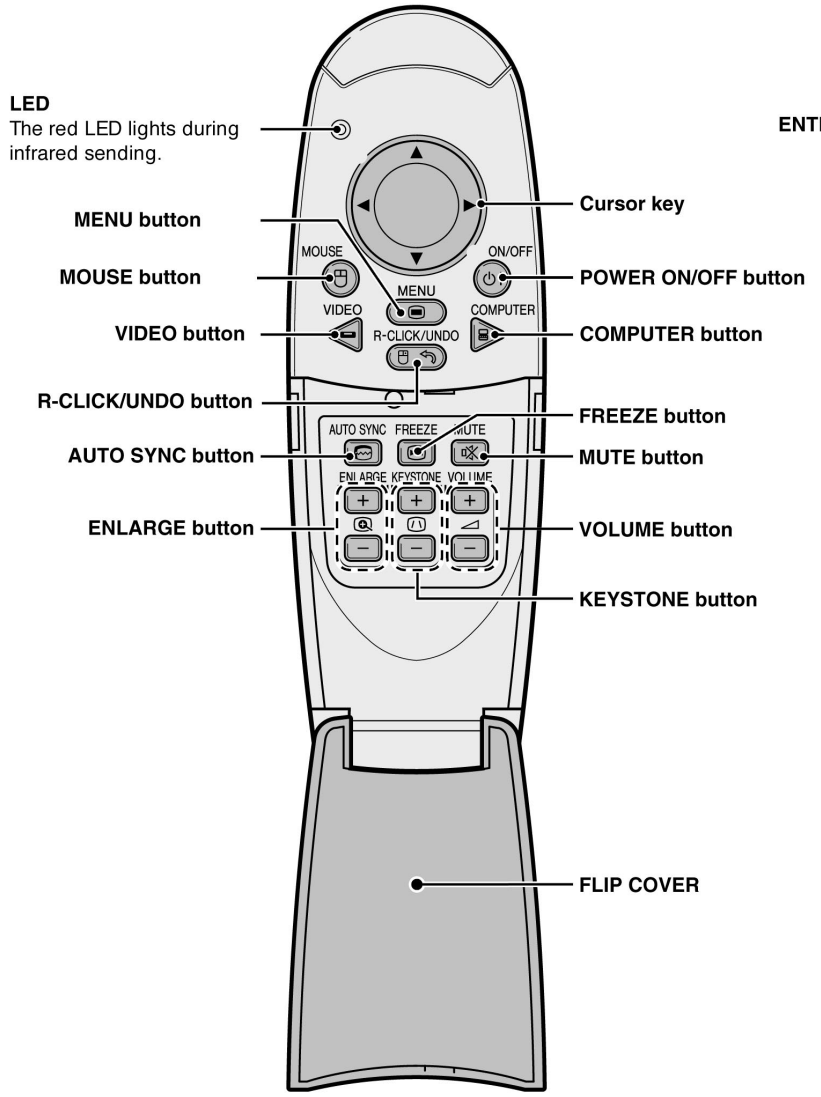


Kensington Lock

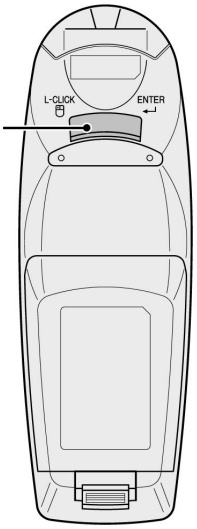
This projector has a Kensington Security Standard connector for use with a Kensington MicroSaver Security System. The logo is trademarked and owned by Kensington Microware Inc.
Refer to the information that came with the system for instructions on how to use it to secure the projector.

Reomte Control

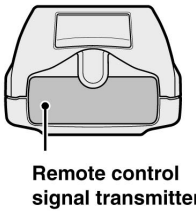
Front View



Rear View



Top View



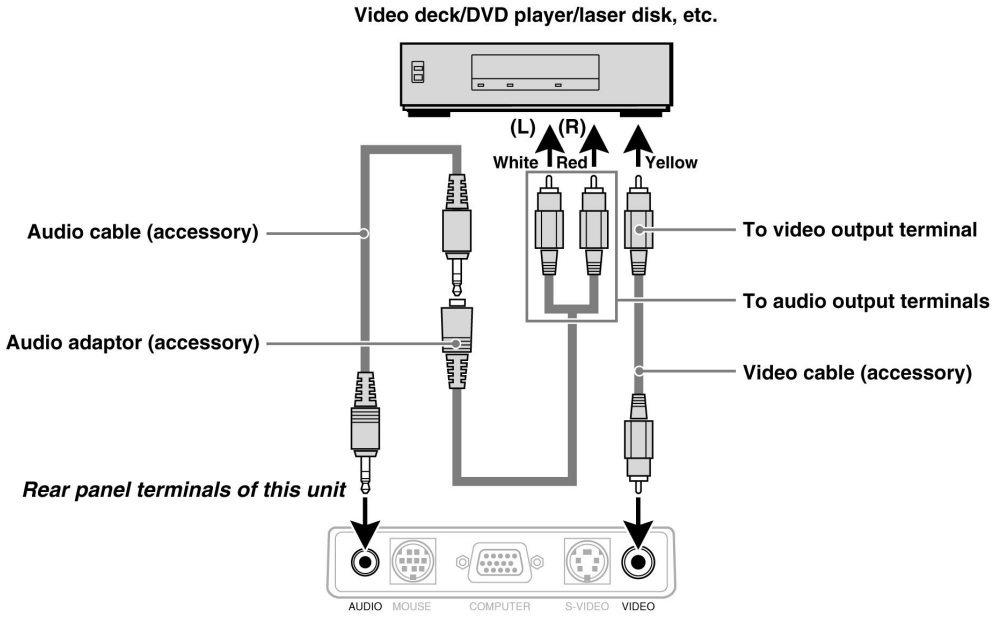
Connections

Connecting video equipment

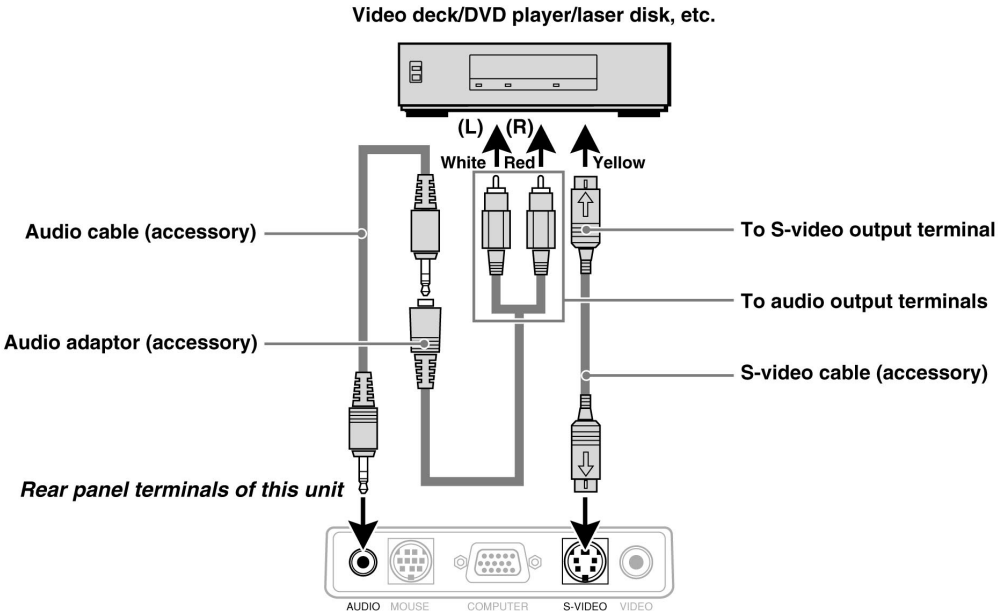
You can connect up to two pieces of video equipment to the unit following the illustrations below.

- You can switch the input source (picture) to VIDEO or S-VIDEO when you connect two pieces of equipment. (The S-VIDEO connection provides more vivid color and higher resolution compared to the VIDEO connection.)
- You can output the sound of only one component through the unit's speaker even when two components are connected. When connecting two external devices, the audio from either one of these devices can be output from the speaker of this unit. Audio can be turned on and off for video related input (video, S-video) from the menu or COMPUTER input terminal.

Connection to the VIDEO input terminal of the unit



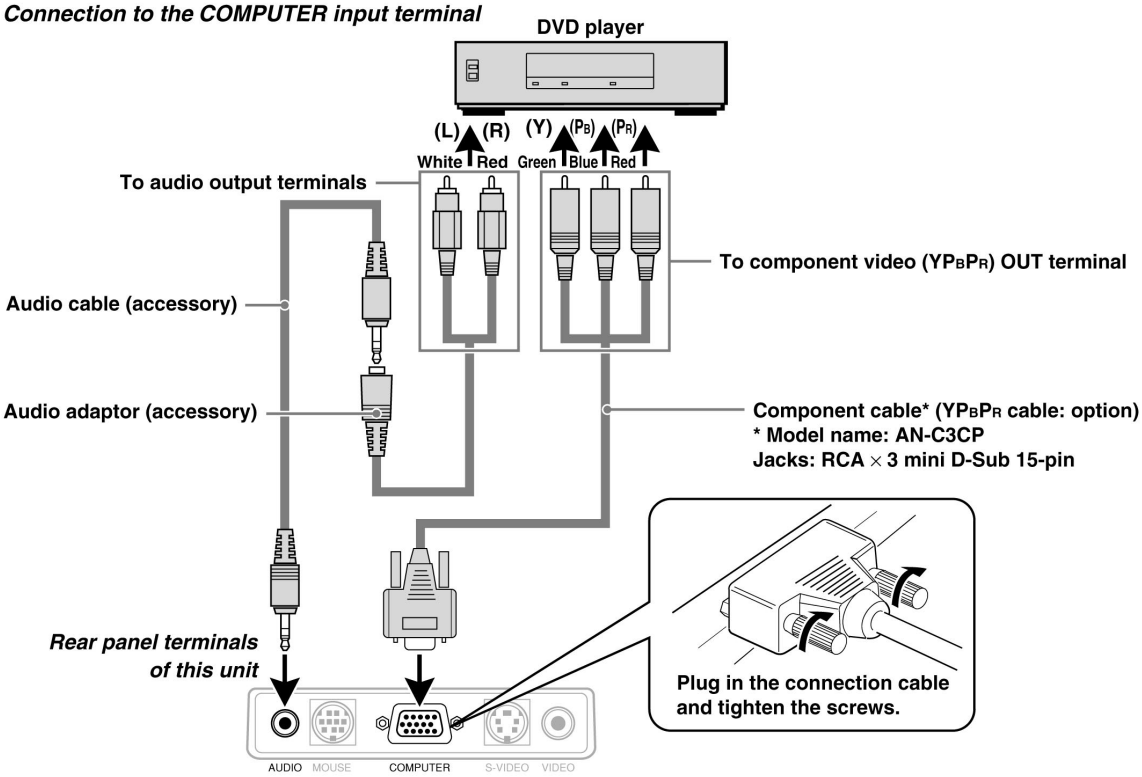
Connection to the S-VIDEO input terminal of the unit



Connecting Video Equipment With Component Video Signal (YP_BP_R) Output

Video equipment with component video signal (YP_BP_R) output can be connected to this unit by setting the COMPUTER input terminal to YP_BP_R from the menu.

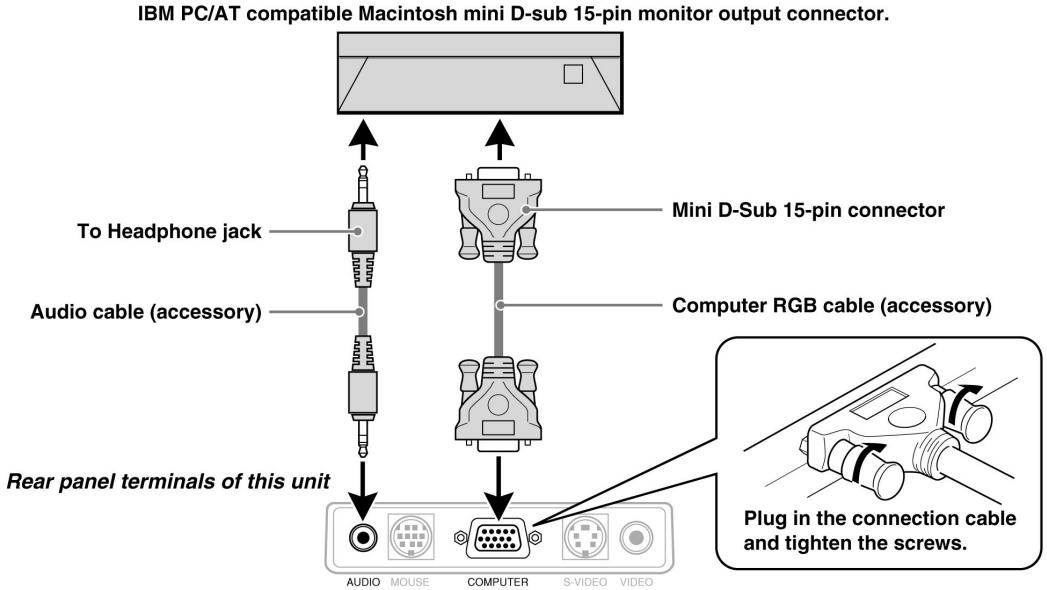
Connection to the COMPUTER input terminal


DVD player
(L) (R) (Y) (PB) (PR)
White Red Green Blue Red
To audio output terminals
To component video (YPBPR) OUT terminal
Audio cable (accessory)
Audio adaptor (accessory)
Component cable* (YPBPR cable: option)
* Model name: AN-C3CP
Jacks: RCA × 3 mini D-Sub 15-pin
Rear panel terminals of this unit
Plug in the connection cable and tighten the screws.
AUDIO MOUSE COMPUTER S-VIDEO VIDEO

Connecting a PC or Macintosh

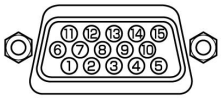
This unit can be used as a display for numerous applications by connecting the analog RGB output connector of a PC to the COMPUTER input terminal of this unit and setting the COMPUTER input terminal to RGB.

- Either read the instruction manual or contact the manufacturer concerning the method used to set your PC.


IBM PC/AT compatible Macintosh mini D-sub 15-pin monitor output connector.
To Headphone jack
Mini D-Sub 15-pin connector
Audio cable (accessory)
Computer RGB cable (accessory)
Rear panel terminals of this unit
Plug in the connection cable and tighten the screws.
AUDIO MOUSE COMPUTER S-VIDEO VIDEO

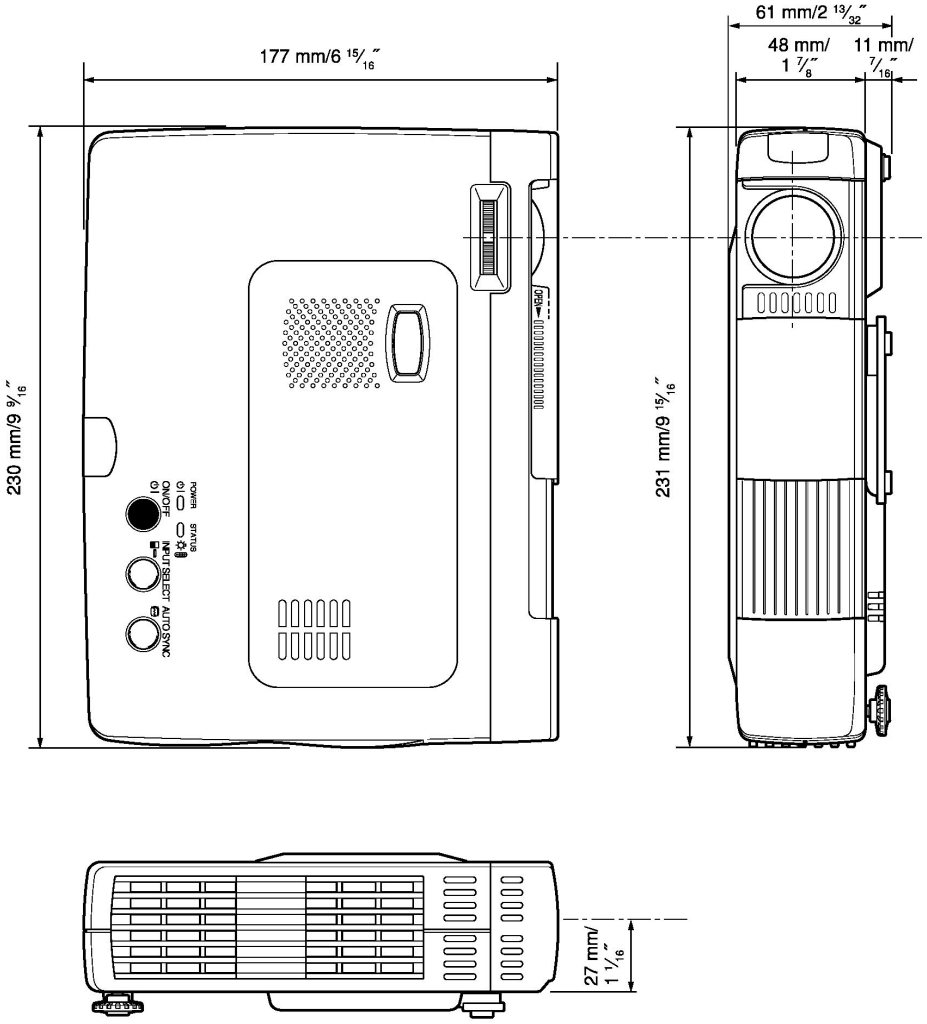
Pin Assignments

PC 15-Pin mini D-Sub



Pin No.	Signal to be connected
1	Red
2	Green
3	Blue
4	GND
5	GND
6	Red GND
7	Green GND
8	Blue GND
9	No Connection
10	Digital GND
11	GND
12	SDA
13	Horizontal Sync
14	Vertical Sync
15	SCL

Dimensions



DISASSEMBLY AND REASSEMBLY

1. Preparations and precautions

● **Tools required**

1. Phillips screwdriver, Nos. 1 and 2
2. Phillips and bladed precision screwdrivers
3. Anti-static wrist band
4. Hexagonal wrench (opposite side: ___ mm)

● **Precautions for disassembly and reassembly**

1. Before starting the procedure, unplug the power cable.
2. Some parts are still hot immediately after operation. Wait until they have cooled down.
3. Restore the components, screws and wires in their original positions.
4. Follow the important notes in handling the components and carrying out the job.
5. Be careful not to confuse the specific component parts for different models.
6. Do not tamper with the unit to ensure safety.

2.Disassembly and reassembly

1) Front panel (See Fig. 1 and Fig. 1-A.)
Remove the two screws (S-8) shown in Fig. 1.
Remove the front panel as shown in Fig. 1-A.
Note: Take care not to damage the IR cable.

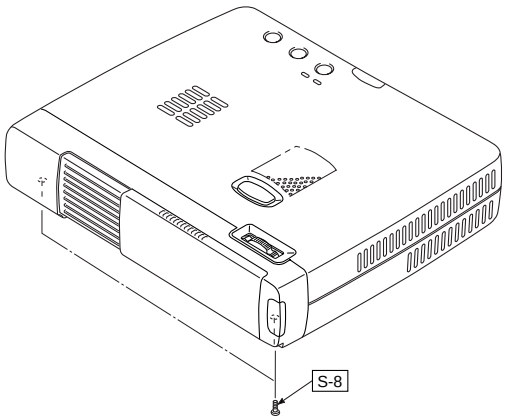


Fig. 1

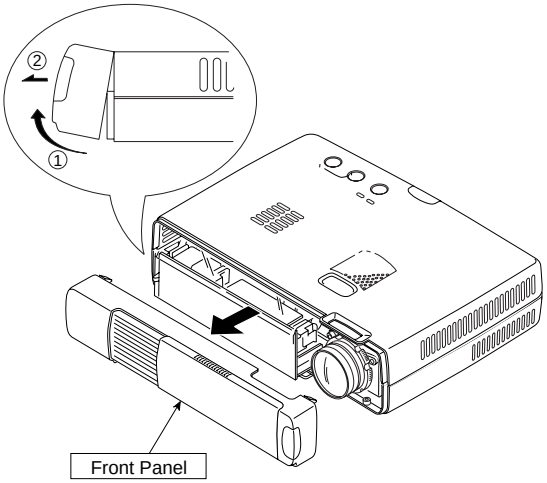


Fig. 1-A

2) Top cover (See Fig. 2.)
Remove the two louver screws (S-8) shown in Fig. 2.
Remove the top cover as shown in Fig. 2.

Note: Take care not to damage the speaker cable.

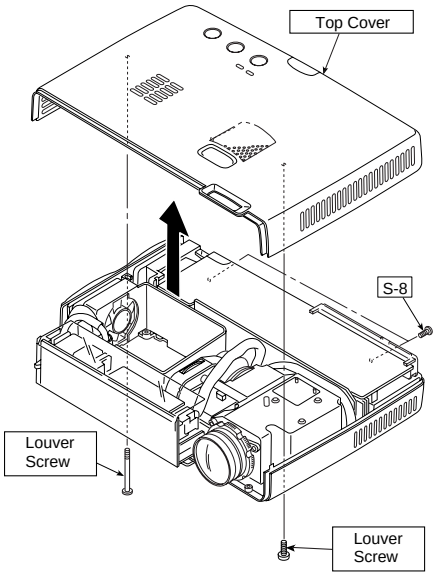


Fig. 2

3) Speaker, buttons, etc. (See Fig. 3.)
As shown in Fig. 3, remove the nuts, speaker button OP, and LED lens. Undo the hooks and remove front buttons.

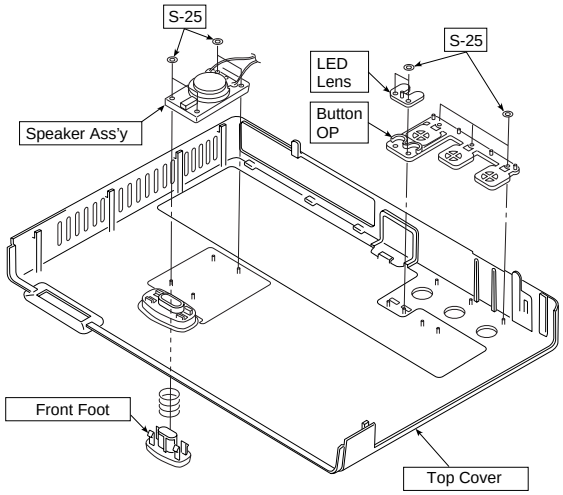


Fig. 3

4) Insulation barrier, urethane foam shield, etc. (See Fig. 4.)
As shown in Fig. 4, the front cabinet is lined with the barrier sheet.

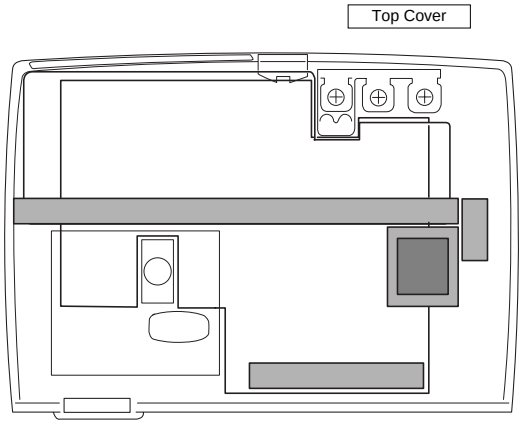


Fig. 4

5) Disassembling the front panel (See Fig. 5.)
Remove the screw (S-12) shown in Fig. 5, and detach the front door.
Remove the screw (S-4) and take out the IR PWB.
Remove the two screws (S-1) and detach the plates.
Remove the screw (S-4) each off the right and left front hooks, and detach the hooks.

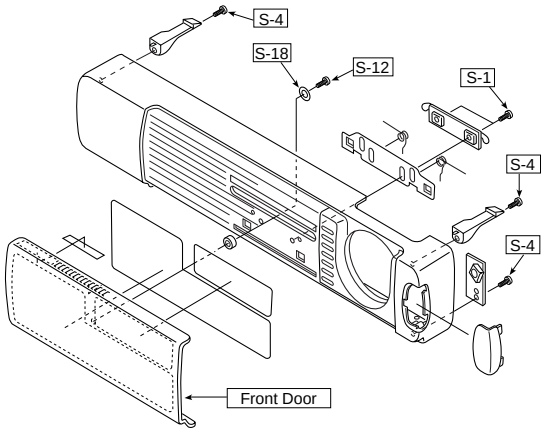


Fig. 5

6) F/E PWB (See Fig. 6.)
Remove the screw (S-13) and two screws (S-5) shown in Fig. 6, and disconnect the connectors.
Remove the screw (S-13) and two RGB spacers, and detach the connector panel.

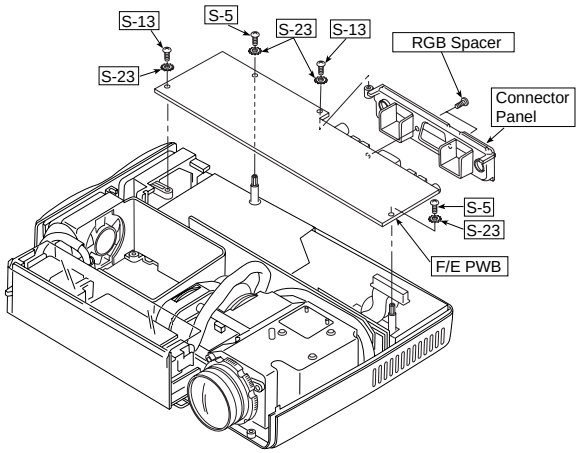


Fig. 6

7) Lamp driver (See Fig. 7.)
Remove the two screws (S-16 and S-17 each) shown in Fig. 7, and dismount the lamp driver.

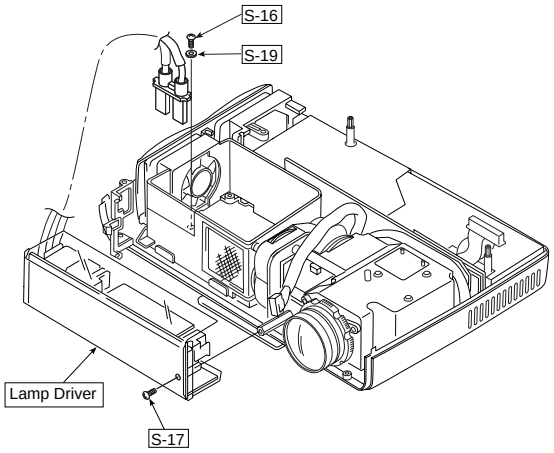


Fig. 7

8) Lens base (See Fig. 8.)
Remove the four screws (S-7) shown in Fig. 8, and detach the lens base.

Note: When disassembling or reassembling, be careful not to get the wires caught. Do not dismount the spherical mirror and the cylinder mirror out of the lens base. Otherwise the adjustment will be lost to produce shadows at the corners of the screen.

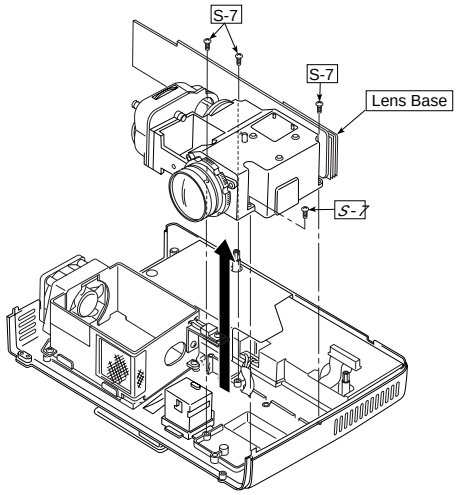


Fig. 8

9) Heat sink (See Fig. 9.)
Remove the two screws (S-11) shown in Fig. 9, and detach the heat sink.

Note: Be careful to fit the heat sink in the correct direction.

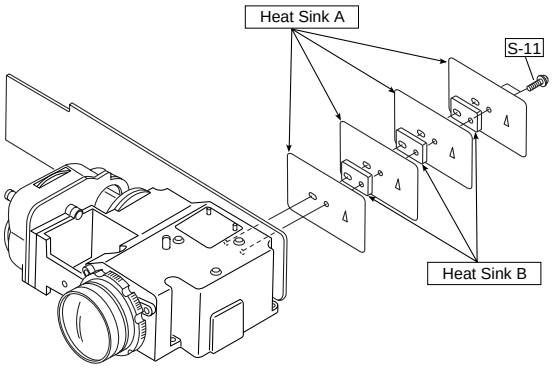


Fig. 9

10)DMD and F/M PWB (See Fig. 10.)
Remove the four screws (S-9) shown in Fig. 10, and detach the DMD and F/M PWB from the lens base.

Note: Take care not to touch the elastomer, DMD surface or terminals, and F/M PWB terminals by finger. When reassembling, be careful not to allow dust or dirt on the parts. Special care should be taken in handling the DMD, elastomer and F/M PWB, which will directly affect the image quality.

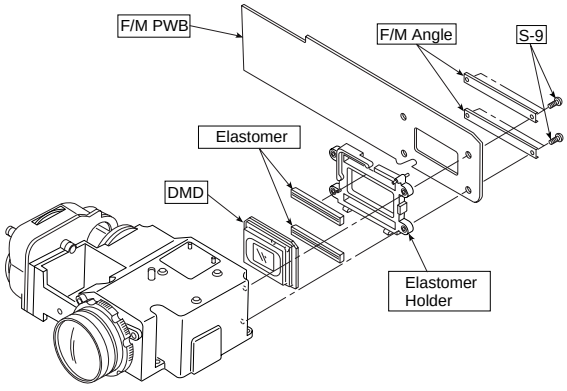


Fig. 10

11) Projection lens (See Fig. 11.)
Remove the three screws (S-7) shown in Fig. 11, and detach the projection lens.

Note: When reassembling, be careful not to damage the spherical mirror inside of the lens base.

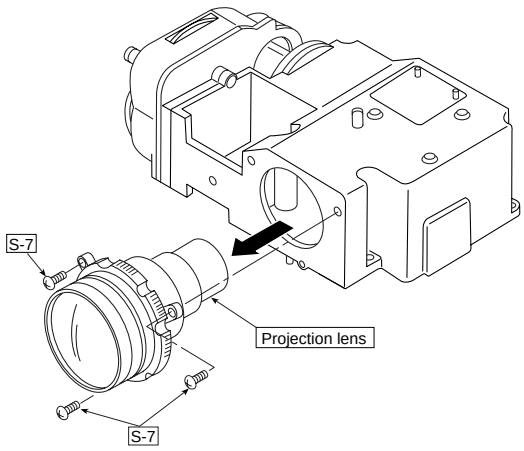


Fig. 11

12) Color wheel (See Figs. 12 and 13.)
Remove the two screws (S-9) shown in Fig. 12, and detach the color wheel from the lens base.
Remove the two screws (S-4) shown in Fig. 13, and detach the wheel cover from the color wheel.
Remove the wheel screw shown in Fig. 13, and detach the wheel sensor.

Note: When reassembling, be careful not to tighten the screws too much. Otherwise the color wheel mat come in contact with other components nearby and fail to rotate. Readjustment will be needed if the color wheel and the wheel sensor have been replaced. (Refer to page __.)

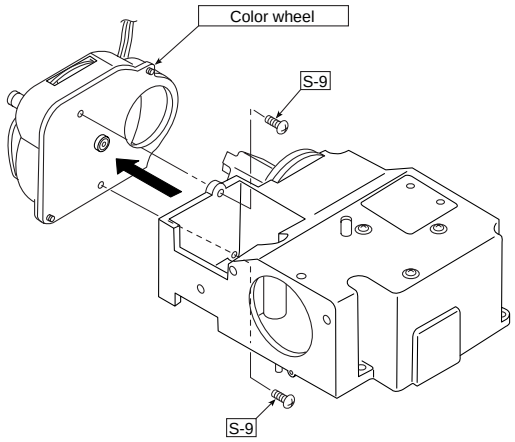


Fig. 12

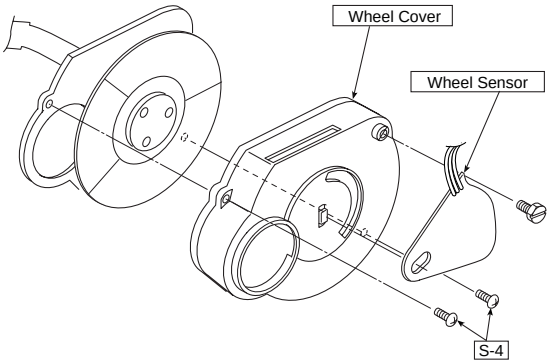


Fig. 13

13) Light tunnel and aperture (See Fig. 14.)
Remove the three screws (S-7) shown in Fig. 14, and detach the light tunnel from the lens base.
Remove the two screws (S-4) shown in Fig. 14, and detach the aperture from the lens base.

Note: Do not disassemble the light tunnel.

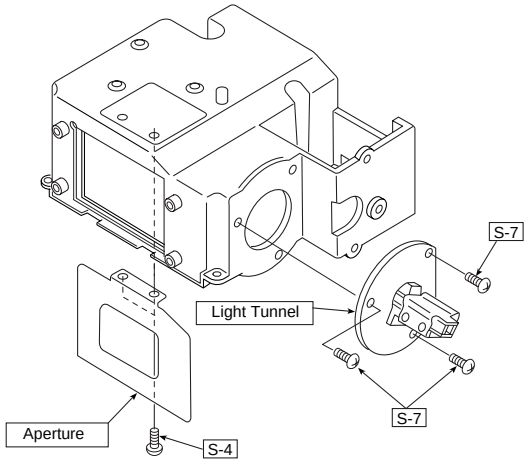


Fig. 14

14)Lamp housing (See Fig. 15.)

Remove the three screws (S-7) shown in Fig. 15, and detach the lamp housing from the bottom cover.

Remove the screws (S-15) shown in Fig. 15, and detach the thermistor and thermistor plate.

Remove the screw (S-7) shown in Fig. 15, and detach the ballast lock base.

With the lamp housing taken out, the 40 fan assembly (DC) can be detached.

Note: Take note of the wiring for the 40 fan assembly, which goes below the lamp housing.

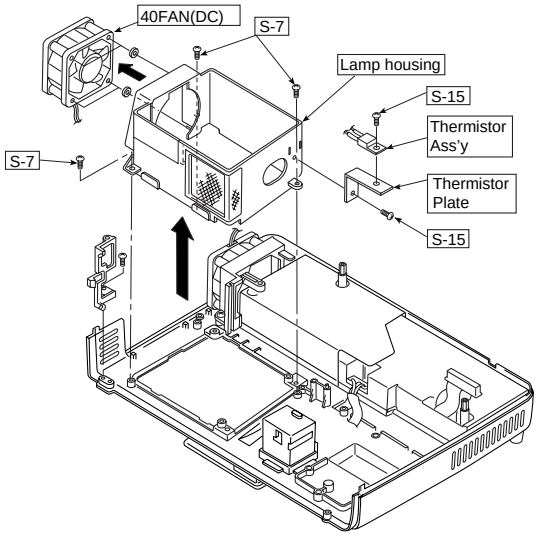


Fig. 15

15)Power unit (See Fig. 16.)

Remove the two screws (S-7) shown in Fig. 16, and detach the fan base from the cover.

Remove the screws (S-5 and S-10 one each) and the two D/M spacers shown in Fig. 16, and detach the power unit.

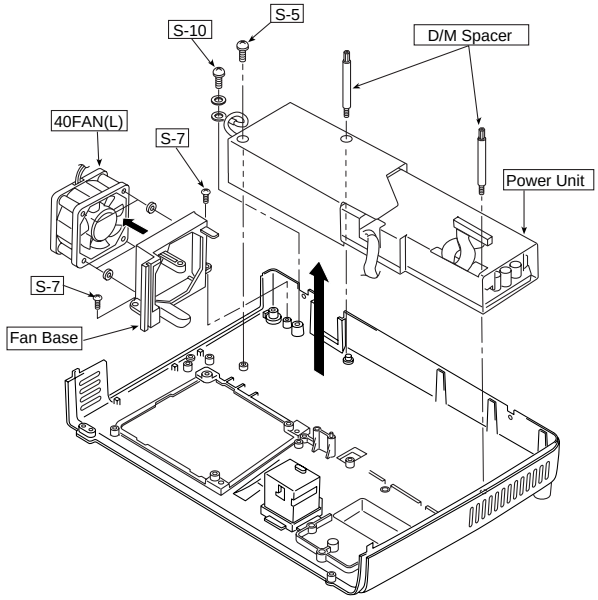


Fig. 16

16)Front and rear feet (See Fig. 17.)

As shown in Fig. 17, press the hook (1) first and then the hook (2). Remove the front feet.

Turn the rear feet away out of place.

Remove the screw (S-7) shown in Fig. 17, and detach the lamp limit switch.

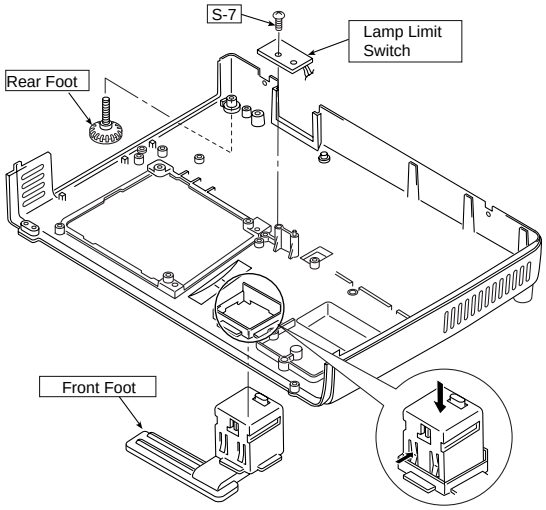


Fig. 17

REPLACING THE LAMP

● **Tools required**

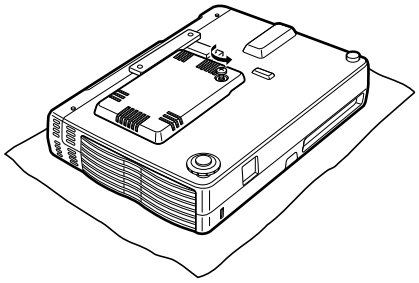
1. A soft sheet on which the projector is placed upside down. It is to protect the unit against scratches.
2. Phillips screwdriver No. 1

● **Precautions in replacing and handling the lamp**

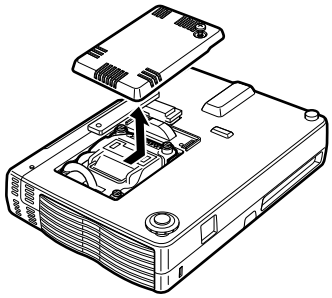
1. Be sure to unplug the power cable before starting the procedure. (For prevention of electric shock)
2. Make sure that the lamp has cooled down before replacement. (For prevention of burns)
3. Do not give intense shock or vibration to the lamp. (For prevention of breakage and injury)
4. Do not disassemble the lamp.

● **Replacement procedure**

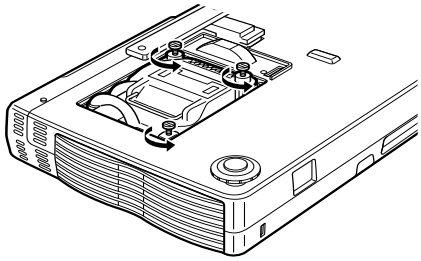
1) Remove the screw off the lamp cover.



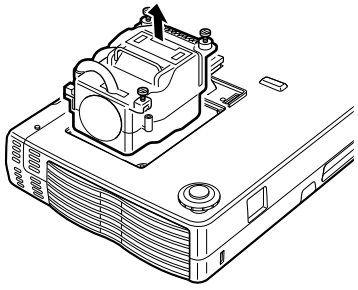
2) Detach the lamp cover.



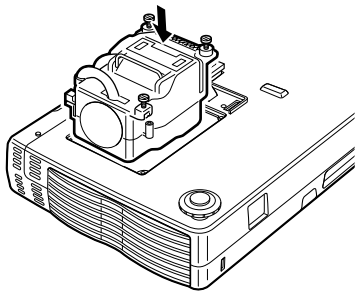
3) Remove the three screws off the lamp unit.



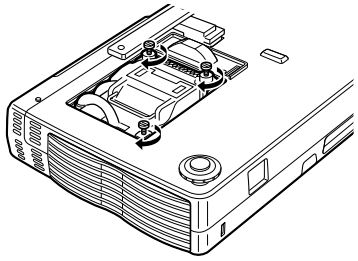
4) Take out the lamp unit by holding its grip.



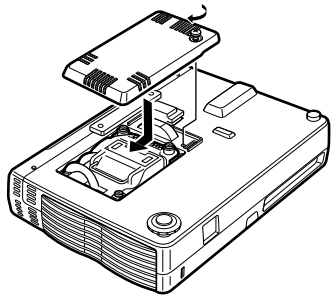
5) Install a new lamp unit into position.



6) Tighten up the three screws in the lamp unit.



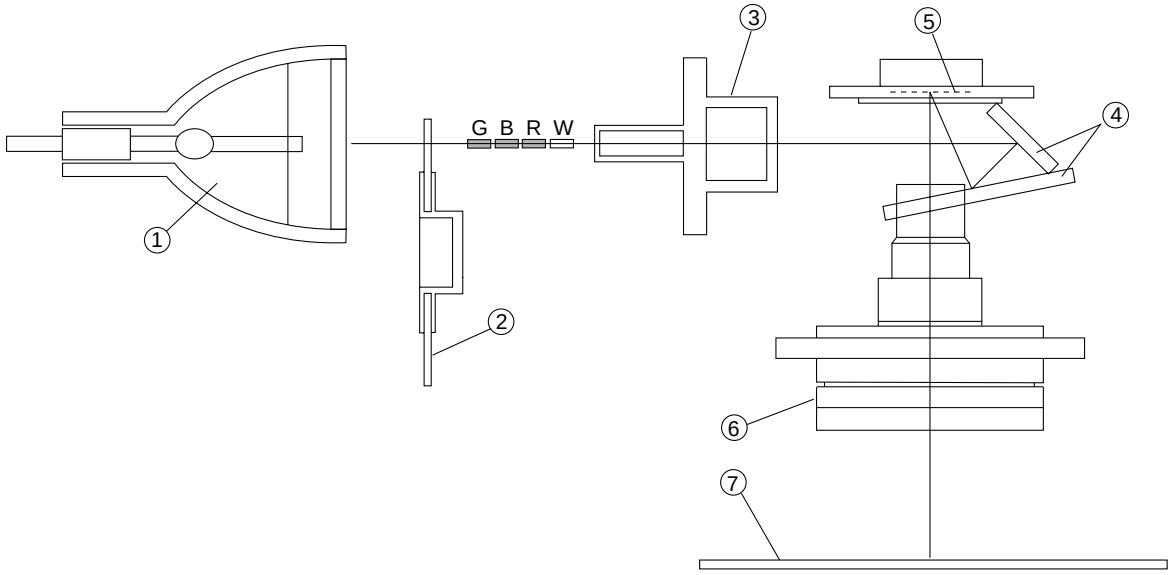
7) Mount the lamp cover and fix it with the screw.



8) Reset the total lamp timer.

●Select the lamp time menu, and keep pressing the POWER ON button of the remote controller for 10 seconds or longer.

BLOCK DIAGRAM OF OPTICAL SYSTEM PRINCIPLE



●Names of parts and operating specifications

① Lamp	The AC light source lamp flickers 300 times per second.
② RGBW color filter	This color filter splits the light into RGB and W components. The W (White) component contributes to the reproduction of bright white color. The rotation-detecting sensor should get in sync with the timing to turn off the lamp at the seam of color filter. The maximum rotating speed is 7200 rpm.
③ Condenser lens and light tunnel	This lens condenses the light that is split in RGB and W components by the color filter, and projects it to the effective area of the reflection mirror 1. Adoption of the light tunnel has enhanced the illuminance ratio in peripheral area of image, reducing the difference in brightness between screen center and peripheries. The image can be reproduced clearly at every corner of the screen.
④ Reflection mirror 1 & 2	This mirror reflects the light projected to the effective area of the DMD.
⑤ DMD chip	This chip turns on and off in proportion to each color component per dot depending on the input source.
⑥ Projection lens	This lens enlarges and projects the incident light coming from the DMD.
⑦ Screen	Projected light (RGB and W components) is interpreted by the viewer's eye as composite color image due to after-image phenomenon.

OPTICAL ADJUSTMENT AND MEASURING

1.Adjustment of color wheel sensor

● **Adjustment needed**

1. When the color wheel unit has been replaced
2. When the color wheel sensor has been replaced
3. When the optical drive unit has been replaced (if a deviation from normal setting is found)
4. When the F/E PWB has been replaced (if a deviation from normal setting is found)

● **Tools required**

1. Personal computer (run on Windows 95/98)
2. RGB cable
3. Dedicated application program (white.exe program commonly used for both models UP and U2)
4. Wrench (5 mm)
5. Projection screen (normally white)

Note: During the adjustment, be careful not to touch the lamp and other hot components.

● **Procedure**

1. Adjustment should be done with the top cover and the front panel removed.
2. Connect the projector to the PC (RGB mode).
3. Start up the dedicated application program (white.exe) on the PC.
4. Press the "6" key on the keyboard. After the pattern shown in Fig. 1 at right has appeared, press the "R" key to get the red image displayed for checking. Check the other colors as well (*1).
5. When part of the image does not appear in red, loosen the wheel screw shown in Fig. 2 below and slide the wheel sensor up or down. Fix the wheel sensor again at the position where the color deviation disappears.
6. Finally press the "Q" key on the keyboard to finish the program.

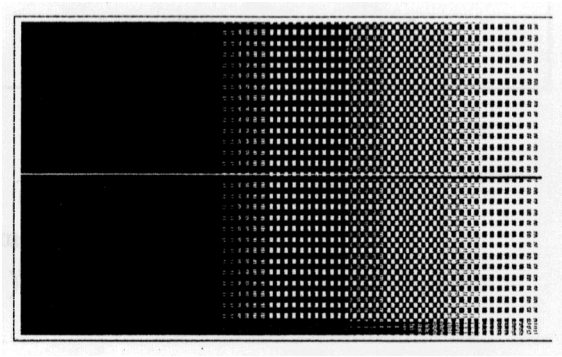


Fig.1

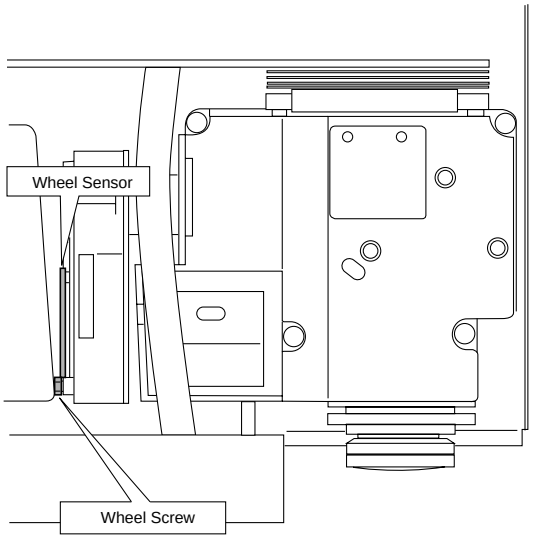


Fig.2

●1: The basic black and white patterns are registered in the numeric keys 0 thru 9 on the keyboard. The colors can be changed to any of White(W), Black(K), Red(R), Green(G), Blue(B), Magenta(M) and Cyanic(C).

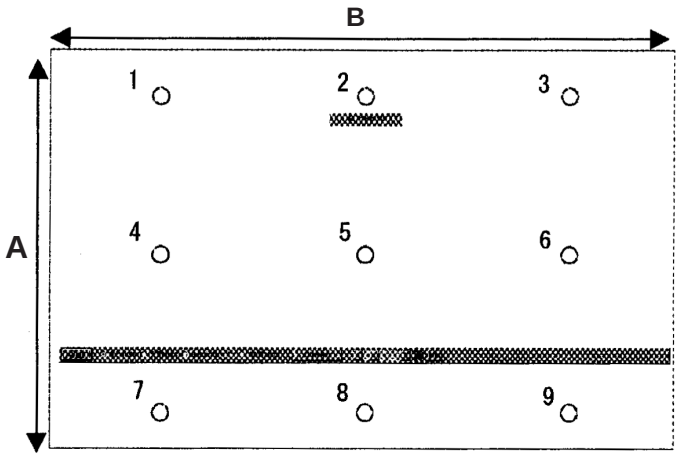
2.Measuring illuminance

● **Tools required**

1. Personal computer (run on Windows 95/98)
2. Projection screen (normally white)
3. Light distribution point display program (Lumens.exe program commonly used for both models UP and U2)
4. Illumination meter

● **Measuring lumen value**

Connect the projector to the PC, and starts lighting. Start up the light distribution point display program (Lumens.exe) on the PC. Make the room dark. (A darkroom is recommended.) Measure the illuminance at the nine points shown at right. Put the measured illuminance into the following equation to obtain the lumen value.



Lumen value (L) = (Average illuminance of 9 points) x (Projected area in m^2)
={(P1+P2+ • • • +P9) / 9} x (A xB)

● **Evenness of illuminance**

Put the measured illuminance into the following equation to obtain the evenness of illuminance.

Evenness of illuminance (%) = (The lowest illuminance measured out of 9 points) / (Average illuminance of 9 points)
= [MIN.(P1~P9) / {(P1+P2+ • • • +P9) / 9}] x 100

● **Peripheral illuminance ratio**

Put the measured illuminance into the following equation to obtain the peripheral illuminance ratio.

Peripheral illuminance ratio (%) = (Average illuminance at P1, P3, P7 and P9) / (Illuminance at P5)
= {(P1+P3+P7+P9) / 4} / P5] x 100

The factory settings are as follows.

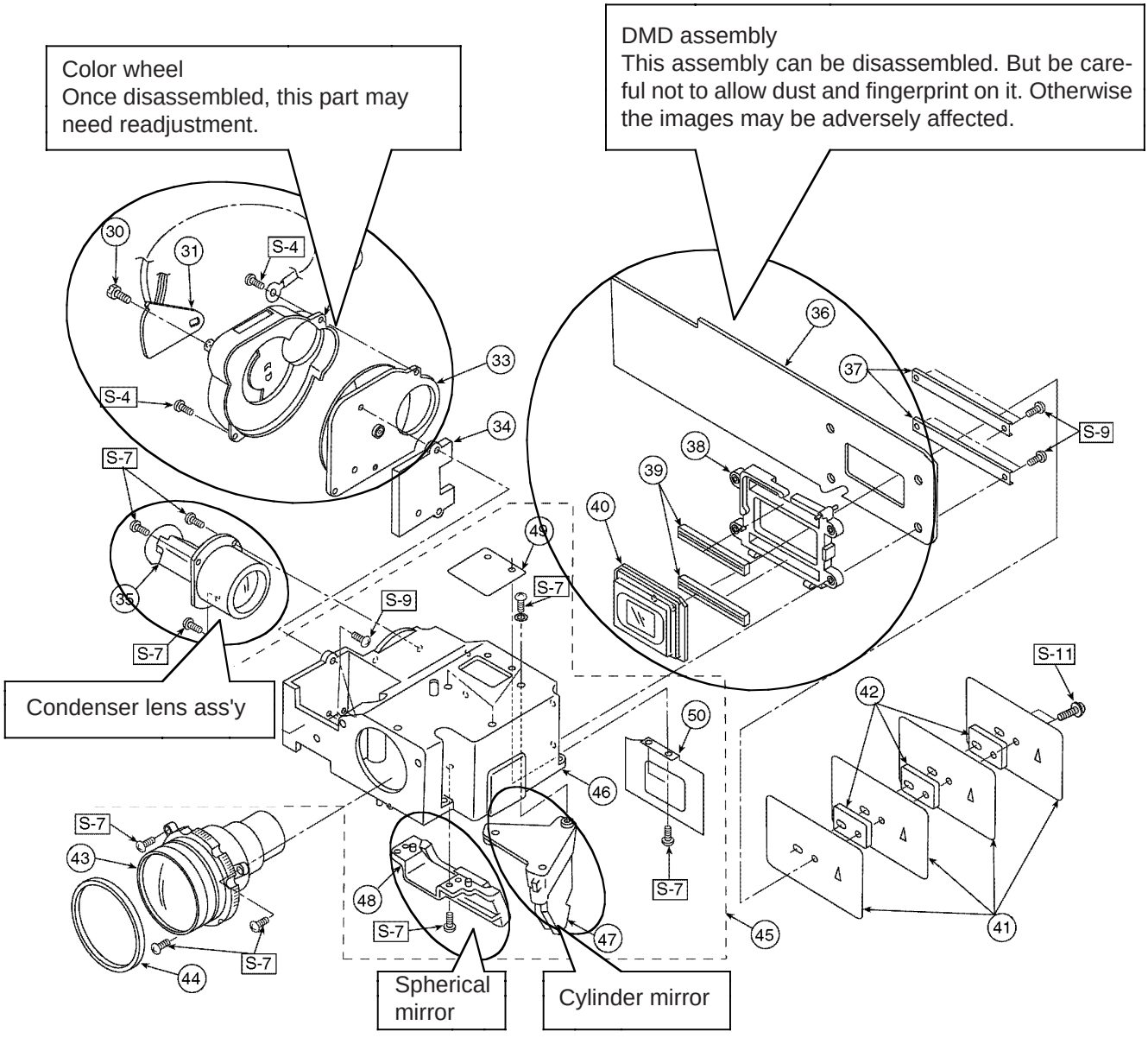
Model PG-M10X

Lumen value: Min. 500 Lm Evenness of illuminance: Min. 50% Peripheral illuminance ratio: Min. 80%

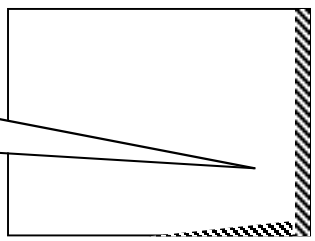
Model PG-M10S

Lumen value: Min. 500 Lm Evenness of illuminance: Min. 50% Peripheral illuminance ratio: Min. 80%

3.Precautions in disassembling the optical mechanism



If the condenser lens or mirror has not been correctly adjusted, there will be shades on the projection screen. (Usually shades appear on the right-hand edge or at the bottom right corner of the screen.)



SAFETY DEVICE

1.Internal temperature detection

The lamp housing has a built-in thermostat which puts out the lamp when the temperature becomes 110°C. Similarly, the power supply unit and lamp driver have thermostats which terminate power supply and driver operation when the temperature reaches 120°C and 115°C, respectively.

2.Lamp unit interlocking switch

The lamp will not light up unless the lamp cover is mounted.

3.Fault-finding status LED indicator

When the lamp fails to light up, the status LED indicator starts flickering. Different flickering intervals help identify the cause. (Refer to the figure at right and the table below.)

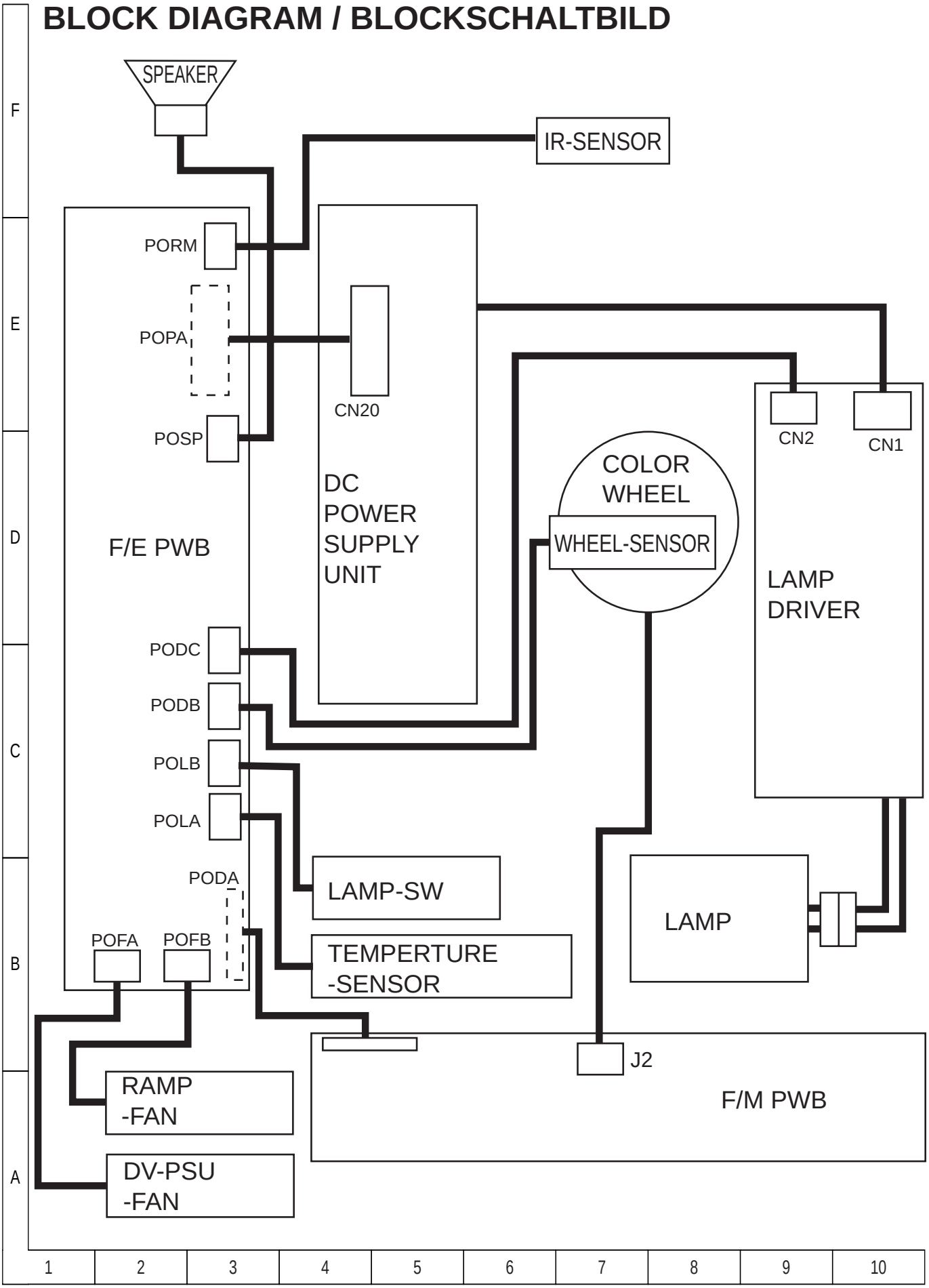
LED condition	Meaning	Correction
OFF (kept off)	Normal condition	
ON (kept on)	Total lamp timer has exceeded 1000 hours.	Replace the lamp with new one, and reset the total lamp timer.
Flickers with a cycle of one second (0.5 sec. ON and 0.5 sec. OFF)	Lamp cover is not mounted correctly.	Mount the lamp cover correctly.
Flickers with a cycle of 4 seconds (2 sec. ON and 2 sec. OFF)	Temperature protector is activated.	If room temperature is too high, relocate the projector to cooler area. If the projector's internal temperature rises abnormally, check the cooling fan vent hole and the unit's bottom vent hole. Clean them if they are clogged.
	Temperature protector still activated. Power may fail to come on if the main power switch is turned on just after it has turned off.	Wait for one minute, and try again to turn on the power switch.
	Lamp light-up voltage error detector is activated.	Wait for one minute, and try again to turn on the power switch.
Flickers with a cycle of 8 seconds (4 sec. ON and 4 sec. OFF)	Fan is nor running.	Check the fan.
Flickers with a cycle of 12 seconds (6 sec. ON and 6sec. OFF)	Lamp fails to light up.	Wait for one minute or longer, and try again to turn on the power switch. Make internal check if the condition is not improved.

TROUBLESHOOTING TABLE

1.Troubleshooting in general

Symptom	Possible causes	Correction
Power is not supplied. The unit does not go into stand-by mode.	1. Power cable not connected to power outlet. 2. Power cable damaged. 3. No power supplied to power outlet.	1. Connect the power cable correctly. 2. Replace the power cable. 3. Check the circuit breaker.
Image does not appear. Lamp does not light up. (Status LED indicator flickers.)	1. Lamp blown out. 2. Total lamp time exceeding 1100 hours. 3. Lamp cover not mounted correctly. 4. Protector circuit activated due to high internal temperature.	1. Replace the lamp. 2. Replace the lamp, and reset the total lamp timer. 3. Mount the lamp cover correctly. 4. Check the operating environment. Check to see if the vent holes are not blocked.
Image does not appear. Lamp is on.	1. Incorrect input selection. 2. Incorrect cable connection. 3. Cable disconnected or connector pin broken. 4. Brightness or contrast set to minimum. 5. Closed shutter. 6. Turning on PC power switch before connecting to the projector when notebook PC is used.	1. Select the correct input. 2. Check the cable connection. 3. Replace the cable. 4. Make adjustment with the program menu. 5. Open the shutter. 6. First hook up the PC to the projector and then turn on the PC power.
Image is distorted.	1. Incorrect placement of the projector.	1. Check the placement condition.
Image is blurred.	1. Lens out of focus. 2. Incorrect angle between the projection screen and the projector. 3. Projection distance out of the range for correct focusing. 4. Dew condensation on the lens. 5. Stained lens or optical unit.	1. Adjust focus with the focus ring. 2. Set the screen and the projector lens at right angles. 3. Make the projection distance within the range for correct focusing. 4. Wait until dew condensation disappears. 5. Clean the lens or optical unit.
Image is dislocated either horizontally or vertically.	1. Screen's horizontal or vertical position maladjusted. 2. Clock frequency maladjusted. 3. Resolution and frequency not corresponding to input signal.	1. Make adjustment with the program menu. 2. Manually adjust the clock frequency and phase. 3. Check the PC's resolution setting.
Remote controller is not working.	1. Does signal transmission indicator (LED) flicker? If no flickering, batteries are dead. Even when the indicator flickers, signal transmission may be ineffective due to low battery voltage. 2. Obstruction between the remote controller and receiver on the projector. 3. Operation out of effective range of remote controller. 4. Intense light or fluorescent lamp existing near the receiver.	1. Replace the batteries with new ones. 2. Remove obstruction or change the operation position. 3. Use the remote controller within its effective range. 4. Relocate the projector to a place not affected by intense light, or turn off the light.
Wireless mouse does not work.	1. Wrong connection between the PC and the projector's mouse terminal. 2. PC started up before connecting to the projector's mouse terminal.	1. Check the connection. 2. Start up the PC after connection.
Status indicator LED flickers.	1. Refer to the description for the status LED (on page 20).	1. Check the flickering intervals and take proper measures.
Characters flitter or colors deviate with RGB input.	1. Poor adjustment in AUTO mode. 2. Adjustment made in MANU mode.	1. Manually adjust the clock frequency and phase. 2. Press the AUTO button.

BLOCK DIAGRAM / BLOCKSCHALTBILD



PARTS LIST

PARTS REPLACEMENT

Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

Les pieces marquées "⚠" sont importantes pour maintenir la sécurité de l'appareil. Ne remplacer ces pieces que par des pieces dont le numéro est spécifié pour maintenir la sécurité et protéger le bon fonctinnement de l'appareil.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

1. MODEL NUMBER
2. REF. NO.
3. PART NO.
4. DESCRIPTION
5. CODE
6. QUANTITY

in **USA**: Contact your nearest SHARP Parts Distributor.
For location of SHARP Parts Distributor,
Please call Toll-Free; 1-800-BE-SHARP

in **CANADA**: Contact SHARP Electronics of Canada Limited
Phone (416) 890-2100.

ERSATZTEILLISTE

AUSTAUSCH VON TEILEN

Ersatzteile, die besondere Sicherheitseigenschften haben, sind in dieser Anleitung markiert. Elektrische Komponenten mit solchen Eigenshaften sind in den Ersatzteil durch "⚠" gekenn-zeichnet.
Der Gebrauch von Ersatzteilen, die nicht deselben Sicherheits-eigenschaften haben wie die vom Hersteller empfohlenen ud in der Bedienungsanleitung angegebenen, können zur Ursache von Blitzeinschlägen, Bränden und anderen Gefahren werden.

"WIE MAN ERSATSTEILE BESTELLT"

Damit Ihre Bestellung promt und korrekt ausgeführt wird, geben Sie bitte folgende Informationen.

1. MODELL NR.
2. REF. NR.
3. ERSATZTEIL NR.
4. BESCHREIBUNG
5. KODE
6. QUANTITÄT

★ MARKIERUNG : ERSATZTEILE-LIEFERUNG

★ MARK: SPARE PARTS-DELIVERY SECTION

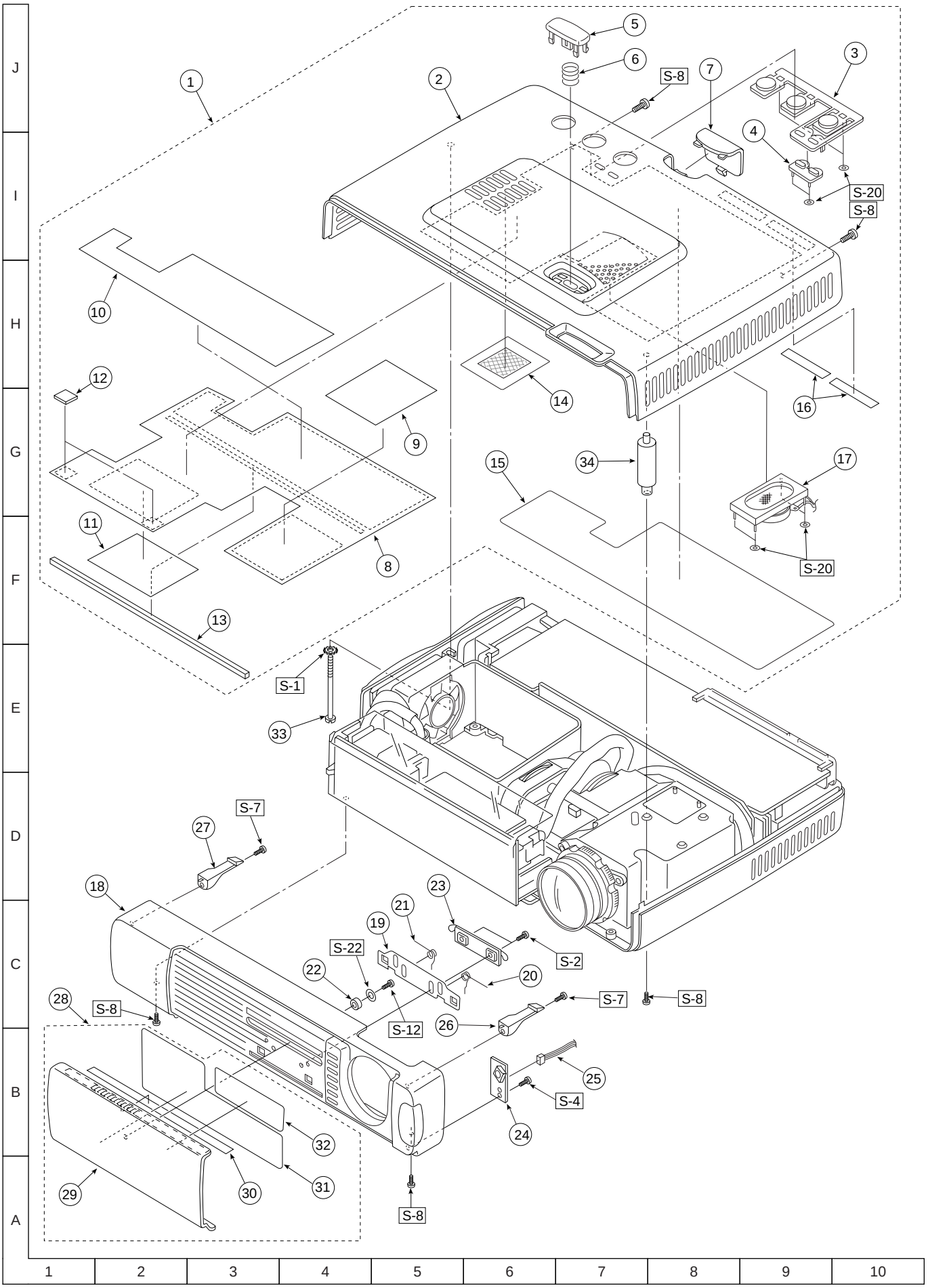
PRINTED WIRING BOARD ASSEMBLIES (UNIT REPLACEMENT ITEM)

Ref. No.	Part No.	★	Description	Code
	9FU770503000	J	IR Sensor Unit	AZ
	9FU770821500	J	F/E Unit (PG-M10X)	DU
	9FU770821600	J	F/E Unit (PG-M10S)	DU
	9FU770508000	J	Lamp Driver Unit	CW
	9FU770507000	J	DC Power Supply Unit	CV

CABINET AND MECHANICAL PARTS

TOP CABINET SECTION

Ref. No.	Part No.	★	Description	Code
1	9FU770821210	J	Top Cover Ass'y (PG-M10S)	CC
1	9FU770820310	J	Top Cover Ass'y (PG-M10X)	CC
2	*Not Available*	–	Top Cover	—
3	*Not Available*	–	Button OP	—
4	*Not Available*	–	LED Lens	—
5	*Not Available*	–	Foot Button	—
6	*Not Available*	–	Foot Button Spring	—
7	*Not Available*	–	Sensor Cover R	—
8	*Not Available*	–	Insulation Board	—
9	*Not Available*	–	Heat Conductive Both Sides Tape S	—
10	*Not Available*	–	Heat Conductive Both Sides Tape B	—
11	*Not Available*	–	Insulation Board Friction Tape	—
12	*Not Available*	–	Insulation Board Spacer	—
13	*Not Available*	–	Top Cover Urethane Form L	—
14	*Not Available*	–	Top Cover Mesh	—
15	*Not Available*	–	Insulation Sheet F/E	—
16	*Not Available*	–	U3 Gasket	—
17	9FU770519000	J	Speaker Ass'y	BA
18	9FU770821300	J	Front Panel (PG-M10S)	BT
18	9FU770820500	J	Front Panel (PG-M10X)	BT
19	9FU177032504	J	Slider Plate	AL
20	9FU770326000	J	Slider Spring (1)	AD
21	9FU770328000	J	Slider Spring (2)	AD
22	9FU770327000	J	Slider Holder	AE
23	9FU177041806	J	Push Slider	AN
24	9FU770503000	J	IR PWB	AZ
25	9FU770511000	J	IR Cable Ass'y	AL
26	9FU770408000	J	Front Hook (1)	AF
27	9FU770409000	J	Front Hook (2)	AF
28	9FU770821410	J	Front Door Ass'y (PG-M10S)	BG
28	9FU770820610	J	Front Door Ass'y (PG-M10X)	BG
29	*Not Available*	–	Front Door	—
30	*Not Available*	–	Front Door Slide Sheet (1)	—
31	*Not Available*	–	Front Door Slide Sheet (2)	—
32	*Not Available*	–	Front Door Reflect Sheet	—
33	9FU770329000	J	Louver Screw	AD
34	9FU770413000	J	Spacer D/M	AH


J
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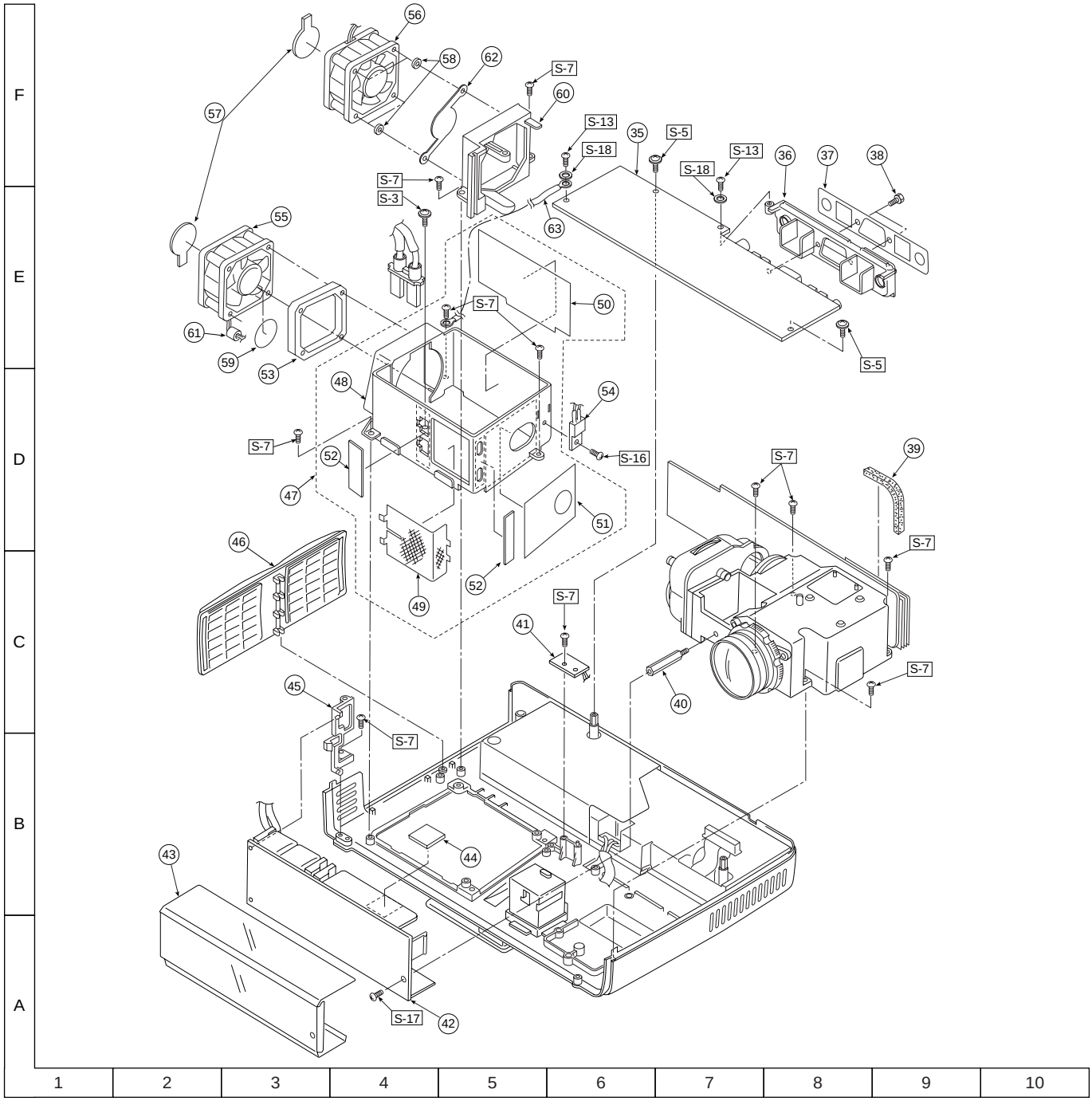
CABINET AND MECHANICAL PARTS (Continued)

PWB Section

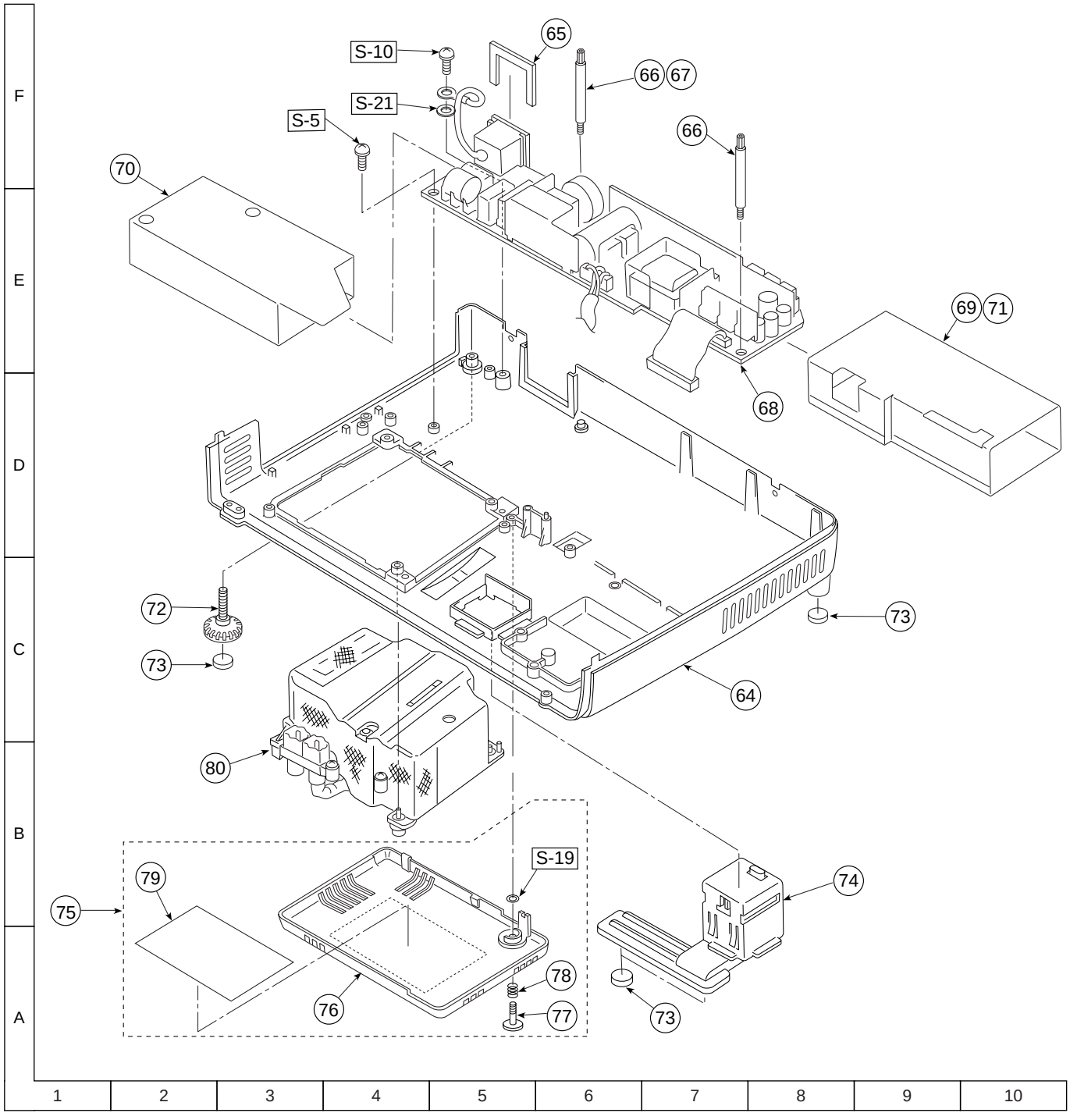
Ref. No.	Part No.	★	Description	Code
35	9FU770821600	J	F/E PWB (PG-M10S)	DU
35	9FU770821500	J	F/E PWB (PG-M10X)	DU
36	9FU770820800	J	Connector Panel	AY
37	9FU770820900	J	Connector Sheet	AG
38	9FU770415000	J	Spacer RGB	AH
39	9FU770426000	J	Lens Base Urethane Form	AC
40	9FU770414000	J	Lamp Driver Stud	AM
41	9FU770505000	J	Limit SW Board Ass'y	AZ
42	9FU770508000	J	Lamp Driver-U	CW
43	9FU770802600	J	Insulate Sheet L/D-N	BB
45	9FU770407000	J	Lamp Driver Lodk Base	AG
46	9FU770821000	J	Louver Panel	AY
47	9FU770417100	J	Lamp House Ass'y-U	BC
48	*Not Available*	–	Lamp House-U	—
49	*Not Available*	–	Lamp House Mesh	—
50	*Not Available*	–	Lamp House Guard	—
51	*Not Available*	–	Insulation Varrier	—
52	*Not Available*	–	Lamp House Mesh Tape	—
53	9FU770814700	J	Lamp fan Spacer	AL
54	9FU770821700	J	Thermistor Ass'y	AR
55	9FU770814600	J	40 Fan Ass'y L-H	BK
56	9FU770517000	J	40 Fan Ass'y DC	BK
57	9FU770412000	J	Fan Cushion	AD
58	9FU770405000	J	Fan Vibration Proof Rubber	AC
59	9FU770406000	J	Fan Guard	AD
60	9FU770402000	J	Fan Base	AH
61	9FU770524000	J	Core	AR
62	9FU177044200	J	Fan Fence	AG
63	9FU770522000	J	Ground Lead	AG



CABINET AND MECHANICAL PARTS (Continued)

BOTTOM COVER SECTION

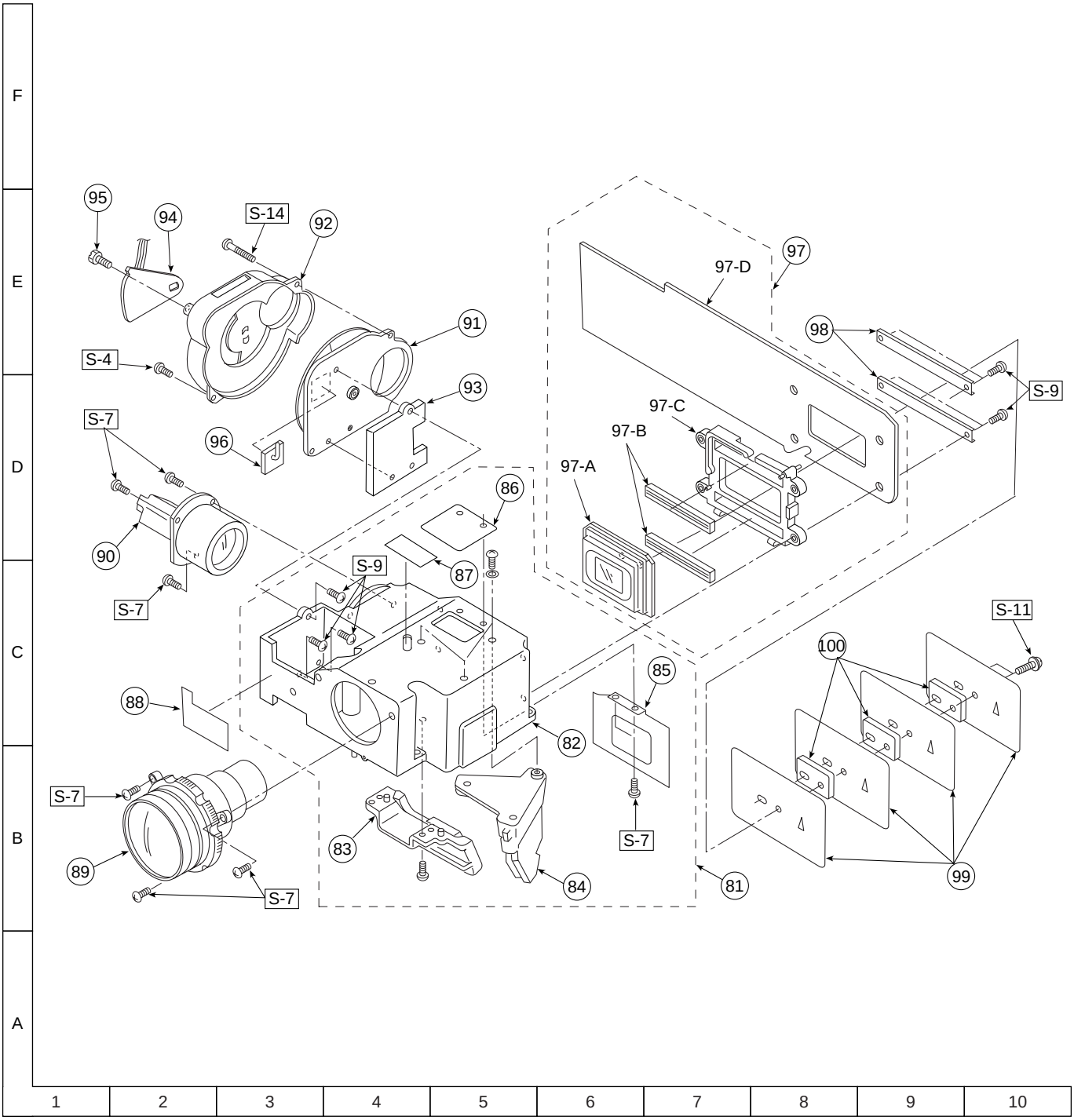
Ref. No.	Part No.	★	Description	Code
64	9FU770820400	J	Bottom Cover	BW
65	9FU177043004	J	Inlet Spacer	AL
66	9FU770413000	J	Spacer D/M	AH
67	9FU770826800	J	Spacer Tube	AD
68	9FU770507000	J	DC Power Unit	CV
69	9FU770825000	J	Insulation Sheet DC-1	BB
70	9FU770825200	J	Insulation Sheet DC-2	BB
71	9FU770424000	J	Insulation Sheet DC-3	AH
72	9FU770314000	J	Rear Foot	AL
73	9FU770320000	J	Rear Foot Rubber	AF
74	9FU770322000	J	Front Foot	BA
75	9FU770820710	J	Lamp Cover Ass'y	BC
76	*Not Available*	–	Lamp Cover	—
77	*Not Available*	–	Lamp Cover Screw	—
78	*Not Available*	–	Lamp Cover Screw Spring	—
79	*Not Available*	–	Lamp Cover Guard	—
80	BQC-PGM10X//1	J	Lamp Ass'y	CS



CABINET AND MECHANICAL PARTS (Continued)

OPTICAL SECTION

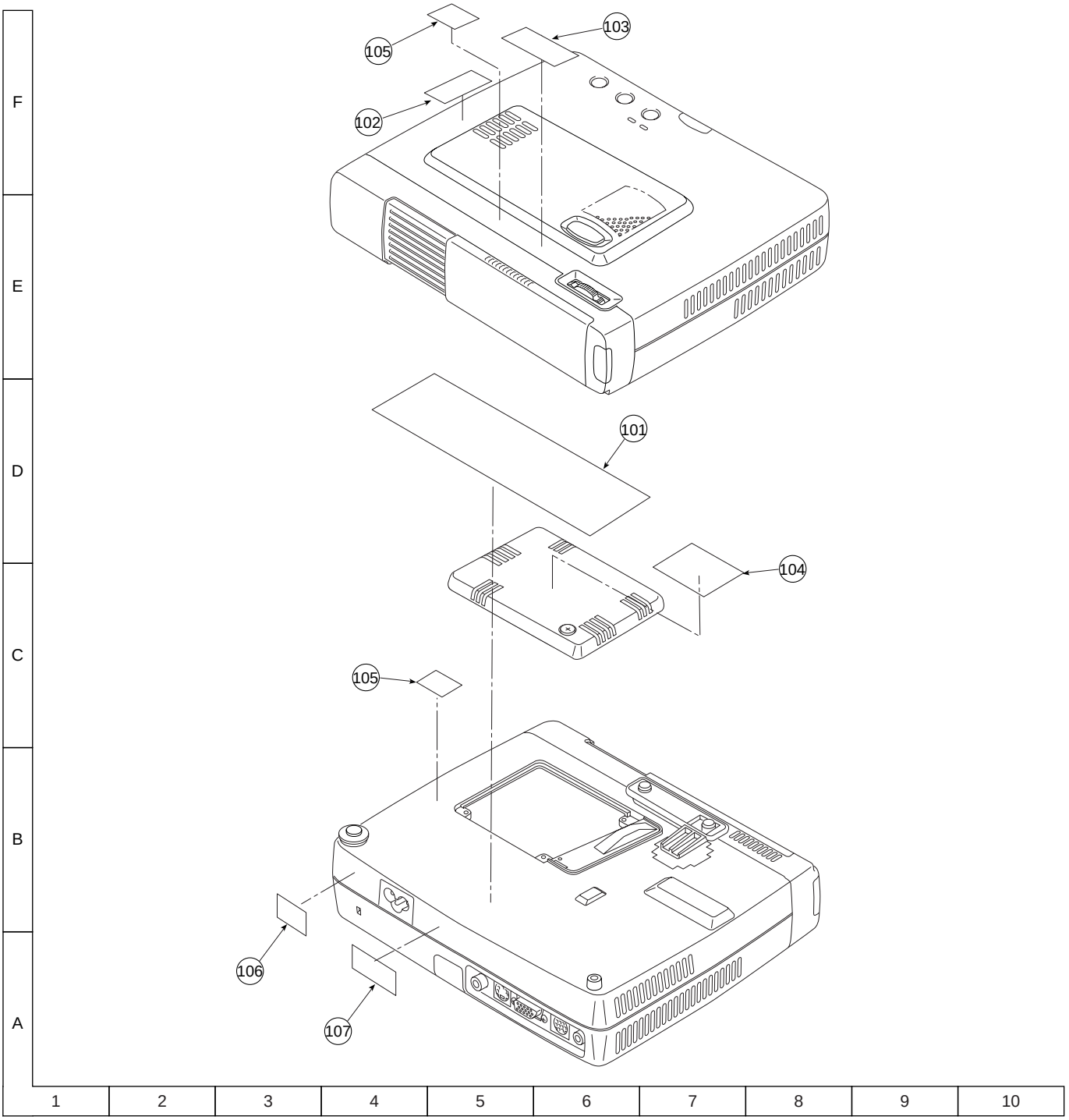
Ref. No.	Part No.	★	Description	Code
81	9FU770800000	J	Lens Base Ass'y	CM
82	*Not Available*	–	Lens Base	—
83	*Not Available*	–	Spherical Mirror	—
84	*Not Available*	–	Cylinder Mirror	—
85	*Not Available*	–	Aparture	—
86	*Not Available*	–	Lens Base Cover	—
87	*Not Available*	–	Lens Base Sheel	—
88	9FU770801900	J	Insulation Sheet LB-U	AN
89	9FU770800100	J	Projection Lens Unit	CR
90	9FU770157000	J	Condenser Lens Ass'y	CD
91	9FU770130000	J	Colour Wheel Ass'y	CE
92	9FU770139000	J	Wheel Cover	AQ
93	9FU770140000	J	Rubber Sheet	BB
94	9FU770504000	J	Wheel Sensor Board Ass'y	AZ
95	9FU770416000	J	Wheel Screw	AD
96	9FU770439000	J	Wire Sticker SD-10	AD
97	9FU770551000	J	DMD Set, 97-A~D (PG-M10S)	GE
97	9FU770510000	J	DMD Set, 97-A~D (PG-M10X)	HL
98	9FU177041004	J	Push F/M Board	AL
99	9FU177040303	J	Heat Sink A	AG
100	9FU177040403	J	Heat Sink B	AG



CABINET AND MECHANICAL PARTS (Continued)

Label Section

Ref. No.	Part No.	★	Description	Code
101	9FU770821900	J	Standard Label (PG-M10S)	AQ
101	9FU770821800	J	Standard Label (PG-M10X)	AQ
102	9FU770822000	J	Hot Caution Label	AD
103	9FU770822100	J	Lens Attention Indication Plate	AE
104	9FU770822200	J	Lamp Caution Sheel A	AF
105	9FU770824000	J	Hot Caution Sheel 3	AD
106	9FU770824100	J	Thunder Caution Indication Plate	AD
107	9FU770826700	J	Attention Indication Board (Swedish)	AE



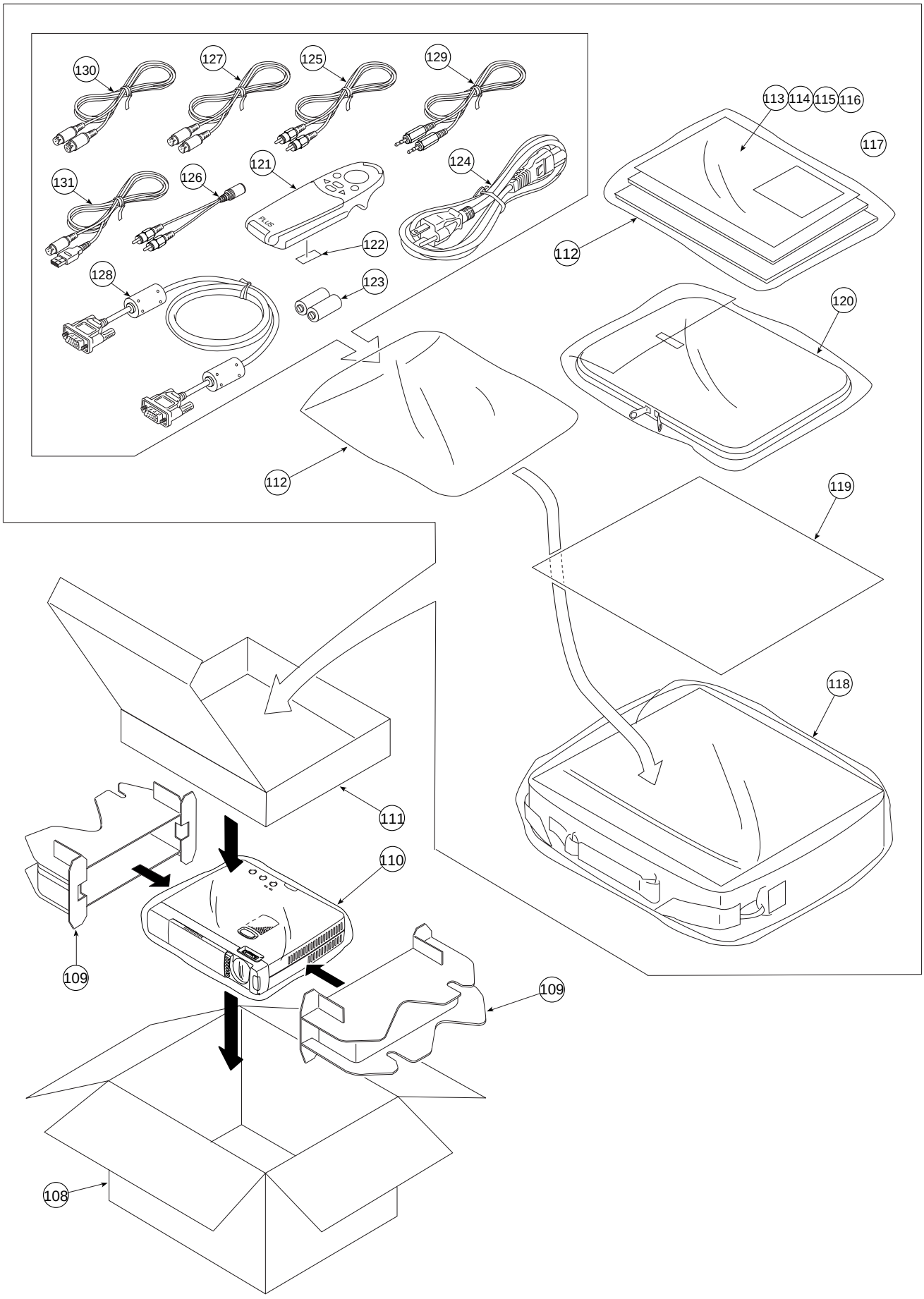
SCREWS, NUTS AND WASHERS

Ref. No.	Part No.	★	Description	Code
S-1	9FU957620020	J	Washer, x1	AB
S-2	9FU951122551	J	Screw, x4	AB
S-3	9FU953930650	J	Screw, x1	AB
S-4	9FU951220450	J	Screw, x4	AB
S-5	9FU952320430	J	Screw, x3	AB
S-6	9FU952320450	J	Screw, x1	AB
S-7	9FU951220550	J	Screw, x27	AB
S-8	9FU951220430	J	Screw, x5	AB
S-9	9FU951220830	J	Screw, x7	AB
S-10	9FU952140510	J	Screw, x1	AB
S-11	9FU959161220	J	Screw, x2	AC
S-12	9FU953120351	J	Screw, x1	AB
S-13	9FU953220530	J	Screw, x2	AB
S-14	9FU951221010	J	Screw, x1	AB
S-15	9FU953226510	J	Screw, x1	AB
S-16	9FU953230650	J	Screw, x1	AB
S-17	9FU951630550	J	Screw, x1	AC
S-18	9FU957220530	J	Washer, x2	AB
S-19	9FU958440200	J	Cut Washer, x1	AB
S-20	9FU958615000	J	Push Nut, x9	AB
S-21	9FU957240810	J	Washer, x1	AB
S-22	9FU957220650	J	Washer, x3	AB

SUPPLIED ACCESSORIES

Ref. No.	Part No.	★	Description	Code
108	9FU770822600	J	Packing Case (PG-M10S)	AQ
108	9FU770822500	J	Packing Case (PG-M10X)	AQ
109	9FU770612000	J	Sleeve	AW
110	9FU770824800	J	Polyethylene Bag (for Machine)	AG
111	9FU770611000	J	Accessory Box	AM
112	9FU753321500	J	Bag (for Operation Manual and Accessories)	AC
113	9FU770822800	J	Operation Manual	BD
114	9FU770822900	J	Quick Start Guide	AG
115	9FU770825700	J	User Registration Form (for USA)	AH
115	9FU770826300	J	User Registration Form (for Canadian English area)	AG
115	9FU770826400	J	User Registration Form (for Canadian French area)	AG
116	9FU770823000	J	Warranty Card	AL
116	9FU770825800	J	Warranty Card (for USA)	AE
116	9FU770826100	J	Warranty Card (for Canadian English area)	AE
117	9FU770826500	J	Bag (for Card)	AG
117	9FU770825500	J	Envelope (for USA)	AF
117	9FU770826200	J	USA Label	AD
117	9FU770825900	J	Sticker (for USA)	AG
117	9FU770825600	J	User Guide Line (for USA)	AG
117	*Not Available*	–	No. Card	—
117	*Not Available*	–	Carton Label	—
118	9FU770823200	J	Carrying Case	BQ
119	9FU770625000	J	Accessory Pad	AF
120	9FU770823400	J	Inner Case	BA
121	9FU770823300	J	Remote Controller	BX
122	9FU770822400	J	Remote Controller Label	AH
123	*Not Available*	–	Batteries	—
124	9FU770726000	J	AC Cord (1.8m) for USA and Canada	AW
124	9FU770727000	J	AC Cord (1.8m) for Europe	AX
124	9FU770728000	J	AC Cord (1.8m) for UK	BA
124	9FU770729000	J	AC Cord (1.8m) Australia	AX
124	9FU770826600	J	AC Cord Attention Label	AF
125	9FU770703000	J	Viideo Cable (1P 1m)	AN
126	9FU770704000	J	Audio Adapter	AS
127	9FU770709000	J	S-Video Cable (1m)	AR
128	9FU770708000	J	RGB Cable (1m)	BB
129	9FU770710000	J	MINI Jack Cable (1m)	AP
130	9FU770706000	J	PS/2 Mouse Cable	AS
131	9FU770707000	J	USB Mouse cable	AS

PACKING OF THE SET / VERPACKEN DES GERÄTS



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